

County

Borough



of Bolton

# ANNUAL REPORT

OF THE

Medical Officer of Health

FOR

1933



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PUBLIC HEALTH DEPARTMENT,  
BOLTON.

16th July, 1938.

To the Chairman and Members of the Public Health Committee.

LADIES AND GENTLEMEN,

I have the honour to submit the report for 1937, the Sixty-sixth Annual Report on the Health of Bolton.

The health of the town was satisfactory, in the main, during the year under review. The death-rate and the infantile mortality-rate both showed a slight increase on the previous year and are a little higher than the average rates for England and Wales.

A sharp outbreak of diphtheria commenced in the last quarter of the year, and twenty deaths occurred. The cases were widespread throughout the town, and many were of a very severe type, due to a particularly virulent strain of diphtheria organisms. There have not been so many cases of diphtheria in Bolton since 1919.

During the year there were 2,420 deaths and 2,166 births, giving a natural decrease in the population of 254. Attention has been drawn to this natural decrease in the population in previous years. It has been pointed out that it is due to the remarkable fall in the birth-rate in the last thirty years. It is not the function of this report to discuss the social and economic motives which urge people to restrict fertility, but it is within its functions to reiterate the important results which must be anticipated from the natural decrease. A continuance of the present low birth-rate is likely to result in a fall in population which will become more rapid in each succeeding year.

The administration of Townleys Hospital was delegated by the Public Assistance Committee to the Public Health Committee as from April 1st, 1937. It was not found possible to complete appropriation of the hospital for administration under the Public Health Acts during the year under review. The transfer of the Public Health Department to new offices in the Civic Centre provides accommodation for staff for the complete administration of the hospital. It is hoped that the appropriation of the hospital will be completed shortly.

The operation of the new Midwives Act commenced on August 1st. Eight salaried municipal midwives were appointed to carry out domiciliary midwifery. It is too early to attempt to form opinions on the results of the Act. There has been a reduction of 12 in the total number of midwives practising in the area, but there are still more than are needed for the demands. Thirty-five of the midwives on the Bolton register only attended 84 Bolton cases between them, an average of 2.4 cases each per annum. A midwife conducting so few cases cannot have the necessary experience to maintain the high standards of professional skill.

The Maternity and Child Welfare Sub-Committee have given consideration to the institutional accommodation for midwifery in Bolton. It has become obvious that mothers in increasing numbers prefer to enter hospital for their confinement rather than to submit their homes to inconvenience and upset. As a result, additional maternity hospital accommodation will have to be provided. The Maternity and Child Welfare Sub-Committee have been unable to decide whether the needs of the town would be served better by concentrating all the maternity work in a new hospital on the site of Haslam Maternity Home, or by increasing the accommodation in Townleys Hospital and closing the Haslam Maternity Home. The matter is of considerable urgency, and the issue will have to be settled in the near future.

The provisions of the Agriculture Act, 1937, were considered during the year, and arrangements were made for the transfer of the various veterinary duties of the local authority to the Ministry of Agriculture and Fisheries. Mr. R. P. Holmes, F.R.C.V.S., the veterinary officer to the local authority, was transferred to the service of the Ministry of Agriculture and Fisheries on April 1st, 1938. It seems opportune to record here the value of the work which has been done in Bolton by Mr. Holmes. The conditions of milk production in Bolton are as good as in any part of Lancashire, and the standard in the milking herds is much superior to the general average. Meat and food inspection is of a high standard. It can be asserted without question that Mr. Holmes' work since he came to Bolton in 1929 has largely contributed to the excellent quality of milk production and to the high standard of meat and food. Those who have had the opportunity of working in closest association with Mr. Holmes recognise the exceptional service he has given to Bolton.

Progress has been maintained in the work of dealing with houses unfit for habitation. There can be no doubt that the work of dealing with insanitary houses will have to be a continuous one. There is still a great deal of property in Bolton below standard. Increased general

standards of housing, coupled with the inevitable decay of existing property as the years pass on, will result in many more houses coming to be regarded as unfit for habitation. The whole procedure of housing would be simplified if certificates of habitation for new houses were granted by the local authority in the first instance for a limited number of years. Renewals of the certificates would be granted if the houses continued fit for habitation. The onus of proving that a house is fit for habitation would be placed on the property owner rather than the onus of proving a house is unfit being placed on the local authority.

The Bolton Day Nursery has given excellent service as a voluntary organisation since 1918. The trustees felt that the work had become one which the local authority should undertake, and in April, 1937, it was transferred to the Public Health Committee. The work has been maintained in its existing form, but it is obvious that any improvement in Bolton trade with the resulting increase in the employment of married women would necessitate the provision of a second day nursery on the south side of the town.

The first-aid services in connection with air raid precautions schemes have demanded a good deal of attention during the year. The matter is not discussed in this report, but one sanitary inspector who has received special training is devoting half of his time to work in connection with the matter. The provision of adequate casualty services is going to call for a large number of volunteers and an elaborate organisation of men and women who are prepared to devote time and thought to the work.

I would again acknowledge the loyal service and willing co-operation of the staff of the Public Health Department during the year.

To you, Mr. Chairman, Ladies and Gentlemen, I would express my thanks for the courtesy and consideration I have always experienced at your hands.

I am, Ladies and Gentlemen,

Your obedient Servant,

R. M. GALLOWAY,

*Medical Officer of Health and  
School Medical Officer.*





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## COUNTY BOROUGH OF BOLTON.

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### Public Health Committee.

*Chairman*—THE MAYOR, ALD. T. HALSTEAD, J.P.

*Vice-Chairman*—COUNC. H. D. SCOWCROFT, J.P.

ALD. MRS. A. E. DOWLING, J.P.

„ SIR T. E. FLITCROFT, J.P. (Resigned Jan., 1938.)

„ B. KIRKMAN, J.P.

„ DR. E. MONKS, J.P.

COUNC. MRS. E. A. ASHMORE.

„ R. ASPINALL.

„ H. CROMPTON.

„ J. GRIMSHAW.

„ DR. E. P. JOHNSON.

„ T. H. LEE.

„ J. S. LOMAX.

„ DR. JEAN M. F. MARSHALL.

„ DR. R. D. MOTHERSOLE.

„ DR. H. N. SAVAGE.

„ J. SHUTTLEWORTH.

„ R. TANKARD.

„ W. W. TONG, M.Sc.TECH., J.P.

„ MRS. H. WRIGHT.

# Public Health and Medical Inspection Staff.

## Whole-Time Officers.

### *Municipal Midwives—*

MRS. A. HULME	†	MRS. E. KIRKMAN	†
MRS. A. LEECE	†	MISS E. A. LOWE	†
MRS. C. MAKIN	†	MISS W. OWEN	* †
MRS. E. PERRINS	†	MRS. O. SMITH	* †

### *Health Visitors—*

MISS E. A. ASPINALL	* †	MISS F. G. LEECH	* †
MISS E. E. BARRETT	* † §	MISS A. MARSH	*
MISS A. L. BIRTWISTLE	* † §	MRS. J. MARTIN	* † ‡
MRS. E. BLACKBURN	*	MISS F. E. McNALLY	* †
MISS L. W. BOOTH	* † §	MISS A. C. POWER	* † §
MISS E. BRACEGIRDLE	* † §	MISS J. ROBBINS	*
MRS. C. M. DUNLOP	*	MISS J. SOUTHWORTH	* †
MISS W. M. HOLDEN	* † §	MISS E. TANNER	*

\*—Trained Nurse.

†—Certificate of the Central Midwives Board.

‡—Certificate for Health Visitors prescribed by Regulations of the Board of Education.

§—New Health Visitor's Certificate of the Royal Sanitary Institute.

*Matron : Haslam Maternity Home—*MISS L. E. EVANS.

*Matron : Borough Fever Hospital—*MISS A. M. HOWITT.

*Chief Sanitary Inspector—*H. V. CASS (*a c d*).

### *Sanitary Inspectors—*

E. SUMNER ( <i>a c</i> )	T. ORMROD ( <i>a</i> )
H. WHITAKER ( <i>a c</i> ) Food Inspector.	J. H. WILLETT ( <i>a</i> )
R. PASHLEY ( <i>b c</i> )	J. PARKINSON ( <i>b</i> )
L. C. BRYAN ( <i>b</i> )	H. W. NOWELL ( <i>b</i> )
R. BAIN ( <i>b</i> )	W. L. WARDLE ( <i>b</i> ) (Temporary)
R. V. WATKIN ( <i>b</i> ) (Temporary)	J. CLARK ( <i>b</i> ) (Temporary)

*a*—Sanitary Inspector's Certificate of the Royal Sanitary Institute.

*b*—Sanitary Inspector's Certificate of the Royal Sanitary Institute and Sanitary Inspectors Examination Joint Board.

*c*—Certificate for Meat Inspection of the Royal Sanitary Institute.

*d*—Smoke Inspector's Certificate of the Royal Sanitary Institute.

**Public Health and Medical Inspection Staff—Continued.**

*Vaccination Officer* P. H. TAYLOR.

*Chief Clerk*—H. DANIELS, Cert. R.S.I.

*Veterinary and Chief Meat Inspector*—R. P. HOLMES, F.R.C.V.S.

*Public Analyst and Bacteriologist*—H. HURST, B.Sc., F.I.C.

*School Dental Surgeons*—

S. J. BRAY, L.D.S.

R. B. KEIGHLEY, L.D.S.

BESSIE WIGNALL, L.D.S.

*Assistant Medical Officers of Health and Assistant School Medical Officers*

ISABELLA SIM, M.B., Ch.B., D.P.H.

J. LITT, M.B., Ch.B., D.P.H., M.R.C.V.S.

*Assistant Medical Officer of Health and Maternity and Child Welfare Officer*—

MARY E. BOULLEN, M.B., Ch.B., D.P.H.

*Tuberculosis Officer and Deputy Medical Officer of Health*—

D. A. WOODESON, M.B., Ch.B., D.P.H.

*Medical Officer of Health and School Medical Officer*—

R. M. GALLOWAY, M.D., D.P.H.

**Part-Time Officers**

*Public Vaccinators and District Medical Officers*—

Public Vaccinators	District (Wards) and Estimated Population	
Dr. L. F. EVANS	Bradford, Exchange, Derby, Runworth and Deane-cum-Lostock (50,067)	District M.O. for Bradford and Exchange
Dr. A. B. PLATT	West and Heaton (28,499)	Also District M.O.
Dr. H. SPINKS	Astley Bridge, East and North (22,846)	do.
Dr. H. W. BOWYER	Halliwell and Smithills (29,645)	do.
Dr. A. W. SMITH	Darcy Lever and Great Lever (15,379)	do.
Dr. H. SPINKS	Brightmet, Church and Tonge (24,358)	
Dr. J. H. MARSH	Hulton (6,456)	

Dr. W. R. HILL is the District Medical Officer for Derby and Rumworth Wards.

Dr. R. W. HIGSON is the District Medical Officer for Deane-cum-Lostock and Hulton Wards.

Dr. J. G. WALSH is the District Medical Officer for Breightmet Church and Tonge Wards.

*Medical Officers: Child Welfare Centres—*

MADGE E. JOHNSON, M.B., Ch.B.

JESSIE R. H. O'SULLIVAN, M.B., Ch.B.

*Orthopædic Surgeon—*S. M. MILNER, M.A. M.B., F.R.C.S.

*Ophthalmic Surgeon—*J. RATCLIFFE, M.B., Ch.B.

*Gynecologist—*J. SCOTT, M.B., Ch.B.



SECTION I.



**Statistics and Social Conditions.**



# SUMMARY OF STATISTICS.

1937.

## COUNTY BOROUGH OF BOLTON.

Position .. .. .	Lat. 53° 35' N., Lon. 2° 27' W.	
Elevation above sea level .. .. .	230-ft. to 1,450-ft.	
Geological Formation :	Boulder Clay and Sand over Coal Measures.	
Rainfall (Av. 1887-1937, 42·225") .. .. .	35·894"	
Area in Acres (Land and Inland Water) .. .. .	15,280	
Population (Census 1921) .. .. .	178,683	
„ (Census 1931) .. .. .	177,250	
„ (Mid-yearly estimated population 1937) .. .. .	170,400	
Density .. .. .	11·1	
Inhabited Houses (Census 1921) .. .. .	41,825	
„ „ (Census 1931) .. .. .	46,618	
Private Families or Separate Occupiers (Census 1921) .. .. .	42,635	
„ „ „ „ (Census 1931) .. .. .	47,706	
New Houses Certified 1937 .. .. .	769	
Estimated No. of Houses in the Borough at 31st December 1937	52,500	
No. of inhabited Houses according to the Rate Books .. .. .	51,258	
Rateable Value at 31st March, 1938 .. .. .	£1,064,704	
Sum represented by a Penny Rate (1937-1938) .. .. .	£4,134 6s. 5d.	
Births .. .. .	2,166	
Birth-rate (per 1,000 of population) .. .. .	12·7	
Deaths .. .. .	2,420	
Death-rate (Crude) (per 1,000 of population) .. .. .	14·2	
Death-rate (Registrar-General's) .. .. .	14·2	
Average Death-rate (1928-1937) .. .. .	13·3	

SUMMARY—Continued.

Heart and Circulation Death-rate .. .. .	4·0
Cancer Death-rate .. .. .	1·7
Respiratory Death-rate .. .. .	1·3
Phthisis Death-rate .. .. .	·53
Epidemic Death-rate (seven chief diseases) .. .. .	·26
Infantile Mortality (Deaths under one year per 1,000 live births) .. .. .	61
Diarrhœa Death-rate (deaths under 2 years per 1,000 live births)	1·8
Puerperal Death-rate (per 1,000 total births) .. .. .	6·1

125 COUNTY BOROUGHs AND GREAT TOWNS—

Birth-rate (per 1,000 of population) .. .. .	14·9
Death-rate (per 1,000 of population).. .. .	12·5
Infantile Mortality (deaths under one year per 1,000 live births) .. .. .	62
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 live births... .. .	7·9

ENGLAND AND WALES—

Birth-rate (per 1,000 of population) .. .. .	14·9
Death-rate (per 1,000 of population).. .. .	12·4
Infantile Mortality (deaths under one year per 1,000 live births) .. .. .	58
Diarrhœa and Enteritis (under 2 years), Death-rate per 1,000 live births... .. .	5·8

## LEGISLATION IN FORCE.

### Local Acts, General Adoptive Acts, Byelaws and Regulations in Force in Bolton.

#### LOCAL ACTS.

Bolton Improvement Act, 1854.

Bolton Improvement Act, 1865.

Bolton Corporation Act, 1872.

Bolton Improvement Act, 1877.

Local Government Board's Provisional Orders Confirmation  
(Abergavenny Union, etc.) Act, 1879.

Bolton Improvement Act, 1882.

Local Government Board's Provisional Orders Confirmation  
(No. 15) Act, 1893.

Bolton Tramways and Improvement Act, 1897.

Bolton Corporation Act, 1901.

Bolton Corporation Act, 1905.

Bolton Corporation Act, 1922.

Bolton Corporation Act, 1925.

#### GENERAL ADOPTIVE ACTS.

Part III.—Public Health Acts Amendment Act, 1890.  
(Adopted—6th May, 1891).

Part IV.—Public Health Acts Amendment Act, 1890.  
(Adopted—6th July, 1910).

#### BYELAWS AND REGULATIONS.

#### DATE MADE.

Slaughter-houses .. .. .	..	13th Feb., 1867.
Common Lodging Houses .. ..	..	2nd Feb., 1898.
Dairies, Cowsheds and Milkshops ..	..	5th July, 1899.
Management, etc., of High Street Baths ..	..	4th Feb., 1903.
Means of Escape in Case of Fire ..	..	10th Sept., 1908.
Tents, Vans, Sheds and similar Structures ..	..	21st Jan., 1926.
Nursing Homes ... ..	..	20th Mar., 1930.
Houses Let in Lodgings .. ..	..	25th Apl., 1932.

### Chief Industries and the Extent of Unemployment.

The chief industry in the town is the manufacture of cotton goods ; sixty per cent. of all juveniles first entering employment in Bolton go into the various branches of the cotton trade. Other important industries are iron and brass foundries, the manufacture of machinery, tanneries and the manufacture of electrical apparatus. The following table, extracted from the Census returns for 1931, shows the occupations of certain groups of operatives aged 14 years and over, including persons " out of work."

	Males.	Females.	Total.
Total number of persons (14 years and over)			
occupied and " out of work " ..	60,590	35,976	96,566
Textile Workers.. .. .	11,579	18,638	30,217
Metal Workers .. .. .	7,779	72	7,851
Persons engaged in Personal Service ..	1,623	4,666	6,289
Transport and Communication ..	4,573	137	4,710
Builders, Bricklayers, Stone and Slate Workers .. .. .	2,593	5	2,598
Makers of Textile Goods ... ..	776	1,504	2,280
Coal and Shale Mines ... ..	2,067	4	2,071
Workers in Wood and Furniture ..	1,808	66	1,874
Agricultural Occupations .. ..	851	64	915
Workers in Skin and Leather ..	513	243	756
Electrical Apparatus Makers and Fitters	629	17	646
Labourers and General Labourers ..	4,125	13	4,138
Other Unskilled Workers .. ..	4,057	2,418	6,475

The extent of unemployment remains high and shows an increase compared with the previous year. At the end of 1937, the total number of men, women and juveniles wholly unemployed and temporarily suspended was 10,758, of whom, 4,797 were temporarily suspended. The corresponding figure for the previous year was 9,079, of whom, 1,926 were temporarily suspended.

### Births.

There were 2,166 live births to Bolton residents in 1937. 2,097 of these births were legitimate and 69 illegitimate. The birth-rate per 1,000 of the population was 12·7. 663 births occurred to Bolton residents in Townleys Hospital, and 380 in Haslam Maternity Home.

The following table gives the birth-rate for the last ten years for England and Wales and for Bolton.

Year.	Birth-rate.	
	England & Wales.	Bolton.
1928	16·7	14·3
1929	16·3	14·2
1930	16·3	13·8
1931	15·8	13·7
1932	15·3	13·2
1933	14·4	11·9
1934	14·8	12·5
1935	14·7	12·7
1936	14·8	12·4
1937	14·9	12·7

The fall in Bolton's birth-rate is greater than the fall in the birth-rate for England and Wales. Fifty years ago the Bolton birth-rate was 34 per 1,000 of the population, and continuance of the fall in the birth-rate must result in a tremendous reduction in the population of our town and the country generally in the next fifty years. There will be a tendency in future years for the death-rate to increase because of the increased age of the population. The natural decrease in the population will be accelerated, and will have to be seriously considered in all our planning for future social developments.

#### Stillbirths.

A stillbirth, by which is meant the dead birth of a child born at any period after the 28th week of pregnancy, must be registered. The number of stillbirths in Bolton in 1937 was 125, giving a stillbirth-rate of 54 per 1,000 total births. The number of stillbirths per 1,000 total

births in the County Boroughs of England and Wales has varied between 41 and 43 since 1931. Bolton has had a rate persistently higher than the average of the county boroughs. The statistical returns show that of the twenty county boroughs with the least satisfactory figures in relation to stillbirths, seventeen are Lancashire and Yorkshire cotton and woollen towns together with Merthyr Tydfil, Swansea and Stoke. Since 1931, only two county boroughs appear to have had a less satisfactory record than Bolton. The character of the towns with a high rate would suggest that there is a relation between stillbirths and the employment of married women in industry, and that in a general way the high stillbirth-rate in Bolton is associated with the large employment of married women in industry.

### Deaths.

Bolton had 2,420 deaths in 1937 giving a death-rate of 14·2 per 1,000 of the population.

During the year 673 persons whose usual place of residence was in the area of this county borough died outside the borough ; of these, 588 died in Townleys Hospital or Fishpool Institution and 32 died in Mental Hospitals.

Non-residents who died in the area numbered 120, of whom 99 died in Bolton Royal Infirmary.

224 Bolton residents died in Bolton Royal Infirmary.

### SUMMARY OF THE PRINCIPAL CAUSES OF DEATH, 1937.

	No. of Deaths.	Per cent. of total Deaths.
INFECTIOUS AND PARASITIC DISEASES	277	11·44
Measles... ..	4	·16
Whooping Cough .. ..	14	·57
Diphtheria .. ..	23	·95
Influenza .. ..	104	4·29
Erysipelas .. ..	5	·20
Encephalitis lethargica .. ..	4	·16
Pulmonary tuberculosis .. ..	92	3·80
Other forms of tuberculosis .. ..	18	·74
Other infectious and parasitic diseases .. ..	13	·53
CANCER AND OTHER TUMOURS .. ..	302	12·47
Cancer .. ..	290	11·98
Tumours .. ..	12	·49



RHEUMATISM, DISEASES OF NUTRITION, ETC.	83	3·42
Rheumatic fever .. .. .	23	·95
Chronic rheumatism, osteo-arthritis ..	11	·45
Diabetes .. .. .	38	1·57
Exophthalmic goitre.. .. .	5	·20
Other diseases .. .. .	6	·24
DISEASES OF THE BLOOD & BLOOD FORMING ORGANS	27	1·11
Anæmia, chlorosis .. .. .	21	·87
Leukæmia, aleukæmia .. .. .	6	·24
DISEASES OF THE NERVOUS SYSTEM & SENSE ORGANS	179	7·39
Meningitis .. .. .	11	·45
Cerebral hæmorrhage .. .. .	91	3·76
Cerebral thrombosis .. .. .	27	1·11
Cerebral embolism .. .. .	4	·16
Hemiplegia .. .. .	12	·49
Epilepsy .. .. .	5	·20
Infantile convulsions.. .. .	4	·16
Paralysis agitans .. .. .	4	·16
Other diseases .. .. .	21	·87
DISEASES OF THE CIRCULATORY SYSTEM ..	693	28·63
Heart diseases .. .. .	520	21·48
Arterio-sclerosis .. .. .	133	5·49
Gangrene .. .. .	4	·16
Abnormalities of blood pressure .. ..	28	1·15
Other diseases .. .. .	8	·33
DISEASES OF THE RESPIRATORY SYSTEM ..	238	9·83
Bronchitis .. .. .	86	3·55
Pneumonia .. .. .	136	5·61
Congestion of lungs, etc. .. .. .	6	·24
Asthma .. .. .	5	·20
Other diseases .. .. .	5	·20
DISEASES OF THE DIGESTIVE SYSTEM .. ..	95	3·92
Ulcer of the stomach or duodenum ..	21	·87
Diarrhœa and enteritis .. .. .	9	·37
Appendicitis .. .. .	7	·29
Hernia and intestinal obstruction.. ..	22	·90
Other diseases of the intestines .. ..	5	·20
Cirrhosis of the liver .. .. .	5	·20
Diseases of the gall bladder and ducts ..	14	·57
Peritonitis without stated cause .. ..	5	·20
Other diseases .. .. .	7	·29

DISEASES OF THE GENITO-URINARY SYSTEM ..	115	4.75
Nephritis .. .. .	82	3.38
Diseases of the bladder .. .. .	5	.20
Diseases of the prostate .. .. .	18	.74
Other diseases .. .. .	10	.41
THE PUERPERAL STATE	14	.57
CONGENITAL MALFORMATIONS	24	.99
DISEASES OF EARLY INFANCY .. .. .	61	2.52
Congenital debility .. .. .	10	.41
Premature birth .. .. .	34	1.40
Injury at birth .. .. .	8	.33
Other diseases .. .. .	9	.37
OLD AGE	205	8.47
DEATHS FROM VIOLENCE	91	3.76
Suicide .. .. .	24	.99
Accidents .. .. .	62	2.56
Other violent deaths .. .. .	5	.20
MISCELLANEOUS CAUSES .. .. .	16	.66

The six principal certified causes of death were :

	Proportion per 1,000 deaths
1. Diseases of the Heart and Circulatory System ..	286
2. Cancer and other Tumours .. .. .	124
3. Infectious and Parasitic Diseases .. .. .	114
4. Bronchitis, Pneumonia and other Respiratory Diseases (excluding tuberculosis) .. .. .	98
5. Old Age .. .. .	84
6. Diseases of the Nervous System .. .. .	73

#### Deaths from Puerperal Causes.

Maternal mortality is the number of deaths of women classed to pregnancy and child-bearing. It is expressed as the rate per 1,000 births (live and still), and is sub-divided into the deaths due to puerperal sepsis, and the deaths due to all other puerperal causes.

There were 14 deaths from puerperal causes in 1937, giving a maternal mortality-rate of 6.11. The rate for England and Wales was 3.11.

	Deaths	BOLTON Rate per 1000 total births	ENGLAND & WALES Rate per 1000 total births
Puerperal sepsis .. ..	2	·87	·94
Other puerperal causes ..	12	5·23	2·17
Total ..	14	6·11	3·11

In addition to the 14 deaths directly due to pregnancy and child-bearing there were 7 deaths where childbirth was a contributory cause. The deaths in these cases were assigned as follows :—

- Two to influenza.
- Two to mitral stenosis.
- One to chronic bronchitis.
- One to disordered action of heart.
- One to rheumatic fever.

The maternal mortality-rates for England and Wales and for Bolton for the past ten years per 1,000 live births are as follows :—

Year.	Puerperal Mortality.	
	England & Wales.	Bolton.
1928	4·4	3·0
1929	4·3	8·5
1930	4·4	6·7
1931	4·1	8·1
1932	4·2	6·7
1933	4·5	8·4
1934	4·6	3·6
1935	4·1	6·7
1936	3·8	4·6
1937	3·2	6·4
Average 1928—1937	4·1	6·2

### Death-Rate of Infants under One Year of Age.

The death-rate of infants is expressed as the number of deaths under one year per 1,000 live births and is called the Infantile Mortality-rate.

Bolton's infantile mortality-rate for 1937 was 61. The figure for England and Wales was 58.

Of Bolton's 2,166 births, 2,097 were legitimate and 69 illegitimate.

The infantile mortality amongst the legitimate children was 59, and amongst the illegitimate 115.

In the following table is given the average infantile mortality for five year periods from 1876 to 1930, and for each year from 1931 to 1937.

Quinquennium	Average rate	Year	Rate
1876-1880	.. 171	1931	.. 78
1881-1885	.. 169	1932	.. 71
1886-1890	.. 173	1933	.. 78
1891-1895	.. 185	1934	.. 53
1896-1900	.. 173	1935	.. 64
1901-1905	.. 157	1936	.. 58
1906-1910	.. 134	1937	.. 61
1911-1915	.. 128		
1916-1920	.. 100		
1921-1925	.. 91		
1926-1930	.. 82		

The part of the infantile mortality which occurs in the first four weeks of life is called the neo-natal mortality. It is mainly due to causes which have been at work before birth.

The following table gives the neo-natal mortality-rate for Bolton since 1905. It will be noted that half the total deaths of infants under one year occur in the first four weeks of life.

The causes of premature birth and of death in the first four weeks of life have not been influenced for the better in the last thirty years to the same extent as the causes of death in the later stages of infancy.

BOLTON'S NEO-NATAL MORTALITY-RATE PER 1,000 LIVE BIRTHS.

Year	Rate	Year	Rate
1905 .. ..	46·8	1921 .. ..	41·2
1906 .. ..	36·7	1922 .. ..	43·0
1907 .. ..	44·6	1923 .. ..	37·6
1908 .. ..	37·3	1924 .. ..	35·5
1909 .. ..	45·4	1925 .. ..	32·8
1910 .. ..	36·7	1926 .. ..	43·7
1911 .. ..	43·2	1927 .. ..	36·2
1912 .. ..	38·7	1928 .. ..	25·8
1913 .. ..	41·7	1929 .. ..	38·3
1914 .. ..	45·8	1930 .. ..	34·6
1915 .. ..	37·8	1931 .. ..	34·1
1916 .. ..	40·1	1932 .. ..	38·5
1917 .. ..	49·8	1933 .. ..	32·9
1918 .. ..	38·9	1934 .. ..	37·0
1919 .. ..	40·3	1935 .. ..	32·6
1920 .. ..	38·9	1936 .. ..	33·8
		1937 .. ..	30·0

The causes of death during the first four weeks of life were as follows :—

Deaths under Four Weeks.

CAUSES OF DEATH.	Under 7 days	7 and under 14 days	14 and under 21 days	21 and under 28 days	Total under 28 days
Icterus Neonatorum	2				2
Inattention at birth	2				2
Pemphigus Neonatorum		2			2
Pneumonia (all forms)	1	1			2
Eczema	1				1
Injury at Birth	8				8
Atelectasis	4				4
Congenital Malformations	9	1	1		11
Premature Births	19	4	2	4	29
Congenital Debility	4				4
Totals	50	8	3	4	65

### Deaths from Cancer.

The number of deaths ascribed to cancer during the year was 290, of which, 115 occurred in males and 175 in females. The cancer death-rate was 1·70 deaths per 1,000 of the population. The corresponding figure for England and Wales was 1·63.

### Deaths from Measles.

Four deaths occurred in 1937, as compared with 9 in 1936.

The table below shows the death-rate for measles for Bolton and for England and Wales since 1927 :—

Year.	Bolton.		England & Wales.
	No. of Deaths	Rate per 1,000	Rate per 1,000
1927	21	·11	·09
1928	17	·09	·11
1929	11	·06	·08
1930	4	·02	·10
1931	24	·13	·08
1932	9	·05	·08
1933	14	·07	·05
1934	12	·06	·09
1935	6	·03	·03
1936	9	·05	·07
1937	4	·02	·02

### Deaths from Whooping Cough.

Fourteen deaths were due, in Bolton, in 1937 to whooping cough. In 1936 the number was eight.

The mortality from whooping cough in Bolton and in England and Wales is shown below :—

Year.	Bolton.		England & Wales.
	No. of Deaths	Rate per 1,000	Rate per 1,000
1927	1	·00	·09
1928	9	·04	·07
1929	85	·46	·15
1930	8	·04	·05
1931	14	·07	·06
1932	11	·06	·07
1933	9	·05	·05
1934	2	·01	·05
1935	13	·07	·04
1936	8	·04	·05
1937	14	·08	·04

#### Deaths from Violence.

During the year 91 deaths occurred from violence. Suicide accounted for 24 of these deaths. Amongst the 62 accidental deaths which occurred, 24 were the result of street accidents. Last year, street accidents accounted for 20 deaths.





SECTION II.

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General Provision of Health  
Services.



## GENERAL PROVISION OF HEALTH SERVICES IN BOLTON.

### LABORATORY FACILITIES.

The local authority employs a whole-time Public Analyst. His report on the work of the department is to be found on page 113.

Routine bacteriological work in relation to infectious diseases is also carried out in the Public Analyst's laboratory. The Bolton Royal Infirmary is provided with a laboratory which is modern and well equipped. The honorary pathologist (Dr. W. Rolland) is assisted by a whole-time pathologist and a staff of laboratory assistants. The Infirmary laboratory is primarily for the pathological and bacteriological work of the hospital. It has no licence for the use of live animals for inoculation purposes. Bolton is dependent on the Public Health Laboratory, Manchester, for pathological services involving inoculation and for certain pathological work in relation to venereal diseases.

The examinations made in the Public Analyst's laboratory during 1937 were as follows :—

	Total	Positive	Negative	Doubtful
Sputum for B. tuberculosis ..	536	156	380	—
Diphtheria (Throat swabs) ..	944	136	788	20
Fever B. typhosus .. ..	3	—	3	—
Paratyphoid A. .. ..	3	—	3	—
Paratyphoid B. .. ..	3	1	2	—

The examinations made in the Public Health Laboratory, Manchester, were as follows :—

	Total	Positive	Negative	Doubtful
Milk (Inoculation test for B. tuberculosis)	173	28	145	—
Nose and throat swabs for hæmolytic streptococci.. ..	30	—	30	—
Diphtheria (Throat swabs) .. ..	15	6	9	—
Diphtheria culture for virulence ..	2	2	—	—
Widal reaction .. ..	6	4	2	—
Fæces for organisms of typhoid-paratyphoid groups .. ..	3	—	3	—
Wassermann reaction				
Blood .. ..	1,144			
Cerebro-spinal fluid .. ..	39			
Kahn test .. ..	6			
Gonorrhœa				
Microscopical test .. ..	36			
Complement fixation test ..	264			

Medical Officers of our own department examined 205 sputum specimens for B. tuberculosis, 978 slides for the gonococcus and 1,390 cultures for the diphtheria bacillus, in the course of routine clinical work.

#### AMBULANCE FACILITIES.

For non-infectious and accident cases, the County Borough of Bolton has provided five motor ambulances. These ambulances are available for the moving, within the area of the County Borough of Bolton, of all cases of sickness and accident for the moving of which an ambulance is necessary. A small charge is made if the circumstances of those requiring the use of the ambulance justify such charge.

The Public Assistance Committee has three motor ambulances which deal with all cases needing removal to or from their institutions.

One motor ambulance is kept at the Borough Isolation Hospital and is available for all infectious cases.

In addition to the above the Bolton Royal Infirmary has a motor ambulance for the removal of cases from the Infirmary to its Auxiliary Hospitals, and for the removal of cases to addresses outside the area of the County Borough.

#### PROFESSIONAL NURSING IN THE HOME.

The Bolton District Nursing Association provides nursing in the home for all cases of illness other than certain infectious diseases and maternity nursing. There is a scale of charges, but necessitous cases are nursed free.

The District Nursing Association co-operates with the Bolton Royal Infirmary in the Bolton Hospital Saturday Scheme organised amongst workpeople in Bolton and district. A contributor is eligible for free home nursing (midwifery and certain infectious diseases excepted) for himself and his wife and for children residing with him who are not following any employment. The operation of the scheme has greatly increased the work of the Association. During the year 2,488 cases were nursed, and these received a total of 99,210 visits. In addition to the general nursing, the staff gave 3,900 treatments to 1,314 first aid cases in factories and workshops. The nurses were also present at 100 operations. A recent addition to the Nurses' Home has been necessary. The nursing staff now consists of a superintendent, two assistant superintendents and twenty-two nurses.

The Bolton Corporation makes an annual grant of £200 to the funds of the Association. The Public Health Committee pays for any home nursing of the following diseases :—puerperal pyrexia, puerperal fever, measles, whooping cough, epidemic diarrhœa, ophthalmia neonatorum, tuberculosis and influenzal pneumonia.

# CLINICS, TREATMENT CENTRES, ETC.

The following table gives particulars of all clinics and treatment centres administered by the Council of the County Borough of Bolton.

Name of Clinic or Centre.	Situation.	Day and Time.	By whom provided.
<b>Infant Welfare Centres.</b>			
1. Tipping Street.	The Friends' School Room, Tipping Street.	Monday, 3-0 p.m.	Grant to the Mother and Child Welfare Association by the Bolton Public Health Committee. The Mother and Child Welfare Association provides the accommodation. Medical supervision, Health Visitors, Drugs, etc., are provided by the Public Health Committee.
2. Chalfont Street.	Chalfont Street Methodist School.	Monday, 3-0 p.m.	
3. Halliwell.	Halliwell Road Free Church, Halliwell Road.	Tuesday, 3-0 p.m.	
4. Grecian Crescent.	Victoria Methodist School, Grecian Crescent.	Tuesday, 3-0 p.m.	
5. Victoria Hall.	Knowsley Street.	Wednesday, 3-0 p.m.	
6. St. Chad's.	St. Chad's School, Belvoir Street.	Wednesday, 3-0 p.m.	
7. Saviour's.	Saviour's Church House, Deane Road.	Thursday, 3-0 p.m.	
8. Daubhill.	Daubhill Methodist School, Derby Street.	Thursday, 3-0 p.m.	
9. Delph Hill.	Delph Hill Methodist School.	Friday, 3-0 p.m.	
10. Tonge Moor.	Tonge Moor Congregational School.	Friday, 3-0 p.m.	
<b>Ante-natal Clinics.</b>			
1. St. George's Road.	Mother and Child Welfare Association, 70, St. George's Road.	Tuesday, 3-0 p.m., and Thursday, 10-30 a.m.	Do. do.
2. Townleys Hospital.	Townleys Hospital, Farnworth, near Bolton.	Wednesday and Thursday, 2-0 p.m.	Bolton Public Assistance Committee.
3. Haslam Maternity Home.	"Ravenswood," Chorley New Road.	Wednesday, 10-30 a.m.	Bolton Public Health Committee.
4. Dental Clinic for expectant mothers.	School Clinic, Charles Street.	Friday, 10-30 a.m. and 2-0 p.m. By arrangement (Evening).	Do. do.
5. Do. do.	School Clinic, Flash Street.	Do. do.	Do. do.
<b>Artificial Sunlight Clinic.</b>	Mother and Child Welfare Association, 70, St. George's Road.	Mon., Wed. and Fri., 10-30 a.m.	Premises—The Mother and Child Welfare Association. Medical supervision and operator—Bolton Public Health Committee.
<b>Massage Clinic.</b>	Mother and Child Welfare Association, 70, St. George's Road.	Mon. to Fri., 10-0 a.m. and 2-0 p.m.	Premises—The Mother and Child Welfare Association. Masseuse—Bolton Public Health Committee.
<b>School Clinics.</b>			
Charles Street.	Charles Street.	<b>Minor Ailment Clinic.</b> Mon. to Fri., 9-0 a.m. and 2-0 p.m. Saturday, 9-0 a.m. <b>Dental Clinic.</b> Mon. to Fri., 9-30 a.m. and 2-0 p.m. Saturday, 9-30 a.m. <b>Ophthalmic Clinic.</b> Mon. and Fri., 9-30 a.m. and 2-30 p.m.	Bolton Education Committee.
<b>Flash Street.</b>	Special School, Flash Street.	<b>Minor Ailment Clinic, Dental Clinic.</b> The same as Charles Street Clinic.	
<b>Orthopædic Clinic.</b>	Bolton Royal Infirmary.	1st Wednesday in month 2nd Wednesday in month (By arrangement).	Bolton Public Health Committee. Bolton Education Committee.
<b>Tuberculosis Dispensary.</b>	Public Health Offices.	Every week-day except Saturday, 9-30 a.m. Friday, 2-0 p.m. (By arrangement)	Bolton Public Health Committee.
<b>Venereal Diseases Clinic.</b>	Public Health Offices.	<b>For Males.</b> Monday, 11-0 a.m. and 6-30 p.m. Tuesday, 7-0 p.m. Wednesday, 11-0 a.m. and 6-30 p.m. Thursday, 11-0 a.m. Friday, 11-0 a.m. and 6-30 p.m. <b>For Females.</b> Monday, 2-30 p.m. Tuesday, 11-0 a.m. Wednesday, 2-30 p.m. Thursday, 6-0 p.m. Friday, 2-30 p.m. Saturday, 10-0 a.m.	Bolton Public Health Committee.
<b>Day Nursery.</b>	41, Arkwright Street.	Mon. to Fri., 7-0 a.m. to 5-30 p.m. Saturday, 7-0 a.m. to 1-0 p.m.	



## Hospitals.

### THE BOLTON ROYAL INFIRMARY.

The Bolton Royal Infirmary is a voluntary hospital and was established in 1814. It moved to its present site in 1883 and has served the hospital needs of Bolton and district for many generations. It has continually developed its resources in accordance with the demands of modern medical practice for increased hospital treatment and investigation of patients. During 1937 alterations have been completed in the Casualty Department for the provision of an operating theatre, recovery wards and individual dressing cubicles. The Royal Infirmary has 235 beds, of which 158 are used for surgical work, 28 for medical work, and 49 for diseases of children. There is a fully equipped pathological laboratory staffed by an honorary pathologist, a whole-time assistant pathologist and laboratory assistants. The special services include X-ray, ophthalmic, gynæcological, aural, diseases of the skin, functional nervous diseases, and radium departments.

The hospital is staffed by honorary physicians and surgeons and a resident surgical officer and five house physicians and surgeons.

During the year under review the number of cases admitted was 5,445, of whom, approximately 28% were from outside the Borough of Bolton. In addition, 13,121 cases were dealt with as out-patients and 9,586 cases were received into the casualty department. At the end of the year there were 507 patients on the waiting list for admission.

The Royal Infirmary has a contributory scheme whereby weekly contributions of 2d. for persons over 21 and 1d. for persons under 21 entitles the contributors and their families to advice and medical and surgical treatment. The District Nursing Association co-operates in the scheme and free home nursing is also provided.

The Edmund Potter Hospital is an auxiliary to the Bolton Royal Infirmary for female patients. It is pleasantly situated in a residential part of the town. There are 43 beds and all the patients who are admitted are sent from the Bolton Royal Infirmary for convalescence. 972 patients were admitted during the year.

The Blair Convalescent Hospital, Bromley Cross, is a voluntary institution with 49 beds for male patients only. Fifteen of these beds are appropriated by the Bolton Royal Infirmary for the use of convalescent patients. The hospital also admits a limited number of paying patients. 753 cases were admitted in 1937.



# TOWNLEYS HOSPITAL.

Townleys Hospital is a general hospital situated in Farnworth just outside the Borough boundary and serves Bolton and the townships of Farnworth, Kearsley, Little Hulton, Little Lever, Horwich, West-houghton and Turton. These districts constituted the old Bolton Union area. Their total population is approximately 272,000. The hospital is staffed by a medical superintendent and four resident medical officers. The hospital, which has 550 beds is provided with dental, X-ray and massage departments, and with the specialist services of aural and ophthalmic surgeons. Approximately 30% of the patients are from districts outside the Borough.

The administration of the Townleys Hospital has been delegated from the Public Assistance Committee to the Public Health Committee for a transitional period prior to its appropriation for use under the Public Health Acts.

The following statistical return relates to the year ending 31st December, 1937.

Total No. of admissions (including infants born in hospital) .. .. .	5,438
No. of women confined in hospital .. .. .	1,156
No. of live births .. .. .	1,079
No. of still births .. .. .	93
} 16 twins	
No. of deaths among children under 4 weeks of age (born in hospital) .. .. .	37
Total No. of deaths among children under 1 year .. .. .	82
No. of maternal deaths among women admitted to hospital for confinement .. .. .	13
Total No. of deaths .. .. .	720
Total No. of discharges (including infants born in hospital) .. .. .	4,639
No. of cases whose total stay was for the following periods :—	
(a) Under 4 weeks .. .. .	4,144
(b) 4 weeks and under 13 weeks .. .. .	950
(c) 13 weeks or more .. .. .	265
No. of beds occupied (excluding cots in maternity wards)	
(a) Average during year .. .. .	466
(b) Highest (16th April, 1937) .. .. .	517
(c) Lowest (15th September, 1937) .. .. .	414
No. of operations under general anæsthetic .. .. .	452
Ante-natal Clinic	
Total No. of expectant mothers seen .. .. .	1,361
No. of attendances .. .. .	4,836



Classification of In-Patients who were Discharged from or who Died in  
Townleys Hospital during the year.

DISEASE GROUPS				Children (under 16 years of age)		Men and Women	
				Dis- charged	Died	Dis- charged	Died
A.	Acute infectious disease (1)	..	..	20	1	52	33
B.	Influenza (2)	..	..	2	—	26	4
C.	Tuberculosis..	..	..				
	Pulmonary	..	..	1	1	27	19
	Non-pulmonary	..	..	1	3	5	2
D.	Malignant disease	..	..	—	—	84	30
E.	Rheumatism	..	..				
	(1) Acute rheumatism (rheumatic fever) together with sub-acute rheumatism and chorea	..	..	17	—	37	1
	(2) Non-articular manifestations of so- called "rheumatism" (muscular rheum- atism, fibrositis, lumbago and sciatica)	..	..	—	—	61	—
	(3) Chronic arthritis	..	..	—	—	7	—
F.	Venereal disease	..	..	—	—	16	—
G.	Puerperal pyrexia	..	..	—	—	3	—
H.	Puerperal fever	{ (a) Women confined in the hospital	..	—	—	1	—
		{ (b) Other cases	..	—	—	8	—
I.	Other diseases and accidents connected with pregnancy and childbirth	..	..	—	—	234	13
J.	Mental diseases	{ (a) Senile Dementia..	..	—	—	97	—
		{ (b) Other	..	—	—	—	—
K.	Senile decay (3)	..	..	—	—	125	154
L.	Accidental injury and Violence (4)	..	..	2	—	61	19
<i>In respect of cases not included above :</i>							
M.	Disease of the Nervous System and Sense Organs	..	..	122	21	169	83
N.	" " Respiratory System	..	..	68	33	270	52
O.	" " Circulatory	..	..	23	6	193	153
P.	" " Digestive	..	..	57	11	210	26
Q.	" " Genito-urinary	..	..	45	4	197	26
R.	" " Skin	..	..	51	—	80	—
S.	Other diseases	..	..	5	1	2	2
T.	Mothers and infants discharged from Maternity Wards and not in- cluded in above figures	{ Mothers Infants	..	— 1023	—	1177	—
U.	Any persons not falling under any of the above headings	..	..	19	22	41	—
TOTALS				1456	103	3183	617

- (1) Includes—with the exception of Acute Primary and Influenzal Pneumonia, Tuberculosis, Puerperal Pyrexia and Puerperal Fever—all generally notifiable diseases, together with Measles, German Measles, Chickenpox, Whooping Cough and Mumps. Cases of Influenzal Pneumonia, Tuberculosis, Puerperal Pyrexia, Puerperal Fever and Acute Primary Pneumonia are recorded respectively under Groups B. C. G. H. & N. Cases of Encephalitis Lethargica are entered under Group A. if acute and under Group M. if chronic.
- (2) Includes Acute Influenzal Pneumonia.
- (3) Confined to cases and deaths in which no more specific diagnosis was practicable.
- (4) Includes suicides, attempted suicides and poisoning cases.

BOROUGH HOSPITAL, HULTON LANE.

The Borough Hospital, Hulton Lane, is a hospital for infectious diseases and for certain forms of pulmonary tuberculosis, and is administered by the Public Health Committee of the Corporation. It takes cases from the County Borough of Bolton only. It has 120 beds but not more than 100 can be regarded as effective because the shortage of room in the nurses' home limits the number of staff who can be employed. The hospital is old and in need of modernization to bring it up to the standards of modern requirements. Plans have been approved for its reconstruction and preparatory work is being done by the architectural staff of the Corporation at the present time.

There is no resident medical officer and the clinical work is carried out by the medical officers of the Public Health Department. Owing to the changing incidence of epidemic disease, the number of cases admitted varies very greatly from year to year. During the first half of the year under review the incidence of infectious disease was small and the number of cases admitted to the hospital was 731.

HASLAM MATERNITY HOME.

Haslam Maternity Home is administered by the Public Health Committee of the Bolton Corporation and is used solely for maternity cases. Patients book their admission in advance of confinement and as a rule emergency cases from the district are not admitted. There is no resident medical officer. Cases are attended to by their own private practitioner or by the midwives of the home. There are eighteen beds and one isolation bed. During the year under review the total number of cases admitted was 400 and 380 infants were born in the home.

WILKINSON SANATORIUM.

Bolton Convalescent Home was founded and endowed by T. Wilkinson, J.P., and was opened by him in 1910. It is used for the treatment of pulmonary tuberculosis. There are 50 beds which are available for the treatment of patients from the area of the old Bolton Union. Thirty-five beds are used for Bolton residents. Dr. Rolland, honorary physician of the Bolton Royal Infirmary, is in clinical charge of the patients. The sanatorium is equipped with a modern X-ray apparatus. During the year under review 65 patients were admitted from Bolton, and 20 patients were admitted from outside the Borough.

MEDICAL SERVICES TRANSFERRED FROM THE LATE BOARD OF GUARDIANS.

TOWNLEYS HOSPITAL.

(See pages 22, 23)

POOR LAW MEDICAL OUT-RELIEF.

Medical out-relief continues to be provided in the same way as before the abolition of the Board of Guardians. In view of the increased work done by the District Medical Officers their salaries have been increased but no change has been made in the system in operation.

## INSTITUTIONAL PROVISION FOR THE CARE OF MENTAL DEFECTIVES.

This provision is made by the Lancashire Mental Hospitals Board which has five representatives from Bolton. A Committee of the Board deals with the institutional care of mental defectives and with the domiciliary care of all defectives who are not capable of instruction in the Flash Street Special School of the Education Committee. The Institutional provision is inadequate in quantity. There are many defectives requiring institutional treatment who have to remain at home for long periods until accommodation is available. Because of this shortage of accommodation, defectives have occasionally to be admitted to Townleys Hospital where no special provisions have been made for them and where conditions are not suitable for any prolonged detention.

## MATERNITY AND CHILD WELFARE.

### Midwifery and Ante-Natal Work.

#### 1—DOMICILIARY.

Domiciliary midwifery work is carried out by the general practitioners of the town with the aid of maternity nurses and by the practising midwives. If the practising midwife in the course of her work finds that she requires the advice or aid of a medical practitioner it becomes her duty to send for her patient's doctor. The local authority pays his fee in accordance with a scale drawn up by the Ministry of Health. The midwife also has a duty to supervise her patients carefully during the ante-natal period. In order to assist the midwife in this work the Corporation have established, in conjunction with the Mother and Child Welfare Association, an ante-natal clinic at 70, St. George's Road. It is conducted by Dr. Mary E. Boullen, the Maternity and Child Welfare Officer.

The following figures give a statistical summary of the work in relation to domiciliary midwifery for the year.

- (a) Ante-natal clinics—St. George's Road (2 weekly).  
397 expectant mothers attended and made 1,141 attendances.
- (b) Confinements conducted by midwives.  
1,027 confinements were conducted by midwives.  
In 310 cases they found it necessary to call in medical aid.
- (c) Confinements conducted by medical practitioners.  
In addition to the 310 cases where practitioners were called in by the midwives, the doctors conducted approximately 200 confinements.

The following table gives particulars of the midwives' work during the year :—

No. of midwives who have practised .. .. .	63
No. of cases attended .. .. .	1,027
Average No. of cases per midwife .. .. .	16
No. of calls for medical aid .. .. .	310
Per cent. of cases in which medical aid was sought ..	30%
No. on the register at the beginning of the year ..	57
No. who ceased to practise in Bolton .. .. .	20
No. on the register at the end of the year .. .. .	44

In addition to the above, the midwives attended 138 cases as maternity nurses.

It will be noticed that the number of domiciliary midwives on the register at the end of the year was 44, a reduction of 12 on the previous year.

Altogether 63 domiciliary midwives notified their intention of practising in the area during the year, or, an average of one midwife for every 16 deliveries.

It is certain that even with the reduced number of practising midwives on the register at the end of the year, there are still far too many for our present needs. Only one midwife attended more than 100 cases and 6 others had over 50 cases. It is remarkable that 11 midwives had not one single case, 12 had only one case, and a similar number only attended between 2 and 10 cases. Stated another way it means that 35 of the midwives on our register attended 84 cases in Bolton or an average of 2·4 cases a year.

The following 404 notifications were received from domiciliary midwives in accordance with the regulations of the Central Midwives Board :—

Medical assistance .. .. .	310
----------------------------	-----

Notifications received from midwives regarding matters other than the summoning of medical aid :—

Stillbirths .. .. .	46
Artificial feeding .. .. .	34
Death of mother or child .. .. .	10
Laying out of dead body .. .. .	3
Liable to be a source of infection .. .. .	1

When a family is not eligible for maternity benefit under the National Health Insurance Acts and the family income falls below a scale approved by the Council, the Public Health Committee pay the midwife's fee for her work at a confinement. Last year 86 such fees were paid.

The Public Health Committee provide home helps for mothers who are unable to pay for assistance in the home during confinement. Home helps were provided in 51 instances. In two cases only was part of the fees recovered.

Sterilized maternity outfits are now supplied free for every domiciliary confinement. Each outfit contains sufficient surgical dressings for the reasonable requirements of a normal delivery.

The Maternity and Child Welfare Officer (Dr. Mary E. Boullen) continues the general supervision and control of the midwives. She is assisted in this work by Mrs. J. Martin, one of the Health Visitors.

During the year three lectures have been arranged by the Public Health Committee for the midwives. They were given by various specialists and were well attended.

### Midwives Act, 1936.

#### SURRENDER OF CERTIFICATES.

Under the provisions of Section 5 of the Midwives Act, 1936, sixteen midwives who had notified their intention of practising in the Borough during the year had their names removed from the Roll of Midwives. Nine of the midwives were directed to surrender their certificates as they were considered incapable of carrying out the duties of a midwife efficiently by reason of old age or infirmity of the body; the other seven midwives surrendered their certificates voluntarily.

Thirteen of the sixteen midwives were paid compensation by this Authority and three were paid by the Lancashire County Council. The compensation paid by Bolton up to the end of the year amounted to nearly £1,700, half of which amount is recoverable from the Exchequer. This authority has received £40. 10s. 6d. from other authorities in cases where midwives have practised in the area of more than one authority.

The number of Bolton cases attended by the 16 midwives during the three years prior to the date of the surrender of their certificates was :—

	No. of Bolton cases.
3rd year before surrender	382
2nd " " "	249
Last " " "	240
Total	871



The amounts of compensation paid varied as follows :—

No. of Midwives.	Amount of Compensation.
1	Under £25
2	£25 - £50
4	£50 - £100
2	£100 - £150
1	£150 - £200
—	£200 - £250
2	£250 - £300
1	Over £300

#### MUNICIPAL MIDWIVES.

During the year eight local midwives were appointed municipal midwives at the salary of £180 per annum rising by annual increments of £10 to £200 per annum with uniform, travelling expenses and laundering of uniform clothing. The establishment of the department allows for the appointment of seven more municipal midwives when the need arises.

The municipal midwives commenced their duties on the 1st August, 1937, and at the end of the year they had attended 181 cases as midwives and 14 cases as maternity nurses making a total of 195 cases, or an average of 24 cases per midwife, which number is 9 less than the number of cases it was thought reasonable for each midwife to undertake in the same period.

The fees payable for the attendance of a municipal midwife on any expectant mother residing in Bolton are as follows :—

	£	s.	d.
Attendance as a midwife .. ..	2	0	0
Attendance as a maternity nurse (i.e. with a medical practitioner in attendance)	1	15	0
Attendance for miscarriage .. ..	1	0	0
Delivery fee only .. ..	10	0	0
Daily visits after delivery .. ..	2	0	per day
(this only applies to cases subsequently removed to hospital before the 14th day.)			

A booking fee of 5/- must be paid in advance. The balance is due on confinement and must be paid before the midwife ceases attendance. Fees either wholly or in part are remitted in necessitous cases.

The services provided by the municipal midwives include preparation for confinement, attendance during confinement, and daily visiting for 14 days after confinement. The Corporation does not undertake to provide the services of a particular midwife, although all reasonable efforts are made to supply the expectant mother with the midwife of her choice. The fees charged do not allow for the services of a medical practitioner nor for any hospital treatment which may be necessary.

## 2—INSTITUTIONAL MIDWIFERY.

### (a) TOWNLEYS HOSPITAL.

There has been a rapid and progressive increase in the number of confinements in Townleys Hospital in the last ten years. The hospital has a modern and efficient maternity unit of 56 beds. A further 20 beds are available if required for ante-natal cases. Two ante-natal clinics are held weekly. During the year 1,361 patients made 4,836 attendances. Of the patients attending, 932 were Bolton cases making 3,565 attendances. More accommodation is required to allow of further clinics. The rooms at present used for this purpose are fully occupied during the rest of the week for other purposes. The ante-natal clinics are conducted by the medical officers of the hospital. The maternity unit admits both "booked" cases and emergency cases from the district. It serves the area of the old Bolton Union. All the cases in the hospital are delivered under the supervision of the medical staff.

The following particulars relate to the cases admitted during 1937 from Bolton and from the county areas served. Approximately 70% of the cases were from Bolton.

No. of beds used for maternity cases ..	..	..	82
No. of cases admitted ..	..	..	1,204
Average duration of stay in days ..	..	..	14
No. of cases notified as—			
(a) Puerperal fever ..	..	..	9
(b) *Puerperal pyrexia ..	..	..	3
*i.e. rise of temperature to 100·4°F. for 24 hours, or recurrence within that period.			
No. of cases of pemphigus neonatorum ..	..	..	4
No. of infants not entirely breast fed whilst in hospital ..	..	..	140
No. of cases of ophthalmia neonatorum ..	..	..	Nil
No. of maternal deaths ..	..	..	13
No. of infant deaths ..	..	..	131
(a) Stillborn ..	..	..	93
(b) Within 10 days of birth ..	..	..	38

(b) HASLAM MATERNITY HOME.

The Maternity Home continues to serve its useful function in the town. It is available for all Bolton mothers. The fees charged vary according to the patient's ability to pay. Deliveries may be conducted either by the midwives of the Home, with medical attendance from a rota of practitioners when necessary; or patients may make their own arrangements with their doctor to attend them. As in previous years most of the deliveries were conducted by the staff of midwives in the Home.

I append full particulars of all cases admitted to the Home in 1937.

STATISTICS, 1937.

No. of beds in the Home	..	..	..	..	18
No. of cases admitted	..	..	..	..	400
Average duration of stay in days	..	..	..	..	13·4
No. of cases delivered by—					
(a) Midwives	..	..	..	..	315
(b) Doctors	..	..	..	..	79
No. of cases in which medical assistance was sought by the midwife—	..	..	..	..	107
(a) Ante-natal	..	..	..	..	19
(b) During labour	..	..	..	..	68
(c) After labour	..	..	..	..	9
(d) For infant	..	..	..	..	11
No. of cases notified as—					
(a) Puerperal fever	..	..	..	..	Nil
(b) *Puerperal pyrexia	..	..	..	..	2
*i.e. rise of temperature to 100·4° F. for 24 hours, or its recurrence within that period.					
No. of cases of pemphigus neonatorum	..	..	..	..	Nil
No. of infants not entirely breast fed whilst in the Home	..	..	..	..	13
No. of cases notified as ophthalmia neonatorum	..	..	..	..	Nil
No. of maternal deaths, with causes	..	..	..	..	Nil
No. of infant deaths—	..	..	..	..	18
(a) Stillborn	..	..	..	..	16
(b) Within 10 days of birth	..	..	..	..	2

POST-NATAL CLINIC.

Dr. J. Scott, gynaecologist to the Bolton Royal Infirmary, conducts a post-natal clinic at monthly intervals in the premises of the Mother and Child Welfare Association, 70, St. George's Road, Bolton. There were ten clinics held during the year. Twenty-five women made a total of 30 attendances. Full use is not being made of the clinic at present and the question of the need for its continuance in its existing form will have to be seriously considered.



#### DENTAL TREATMENT FOR EXPECTANT MOTHERS.

Dental treatment is provided for expectant mothers whose financial circumstances prevent them from paying a private dental practitioner for necessary treatment. The work is carried out, by arrangement with the Education Committee, in the school dental clinics at evening sessions. During the year 97 expectant mothers made 547 attendances. The scope of the work has been extended in certain cases to the provision of dentures. Thirty-nine mothers were provided with dentures. The charge made varies in accordance with the financial circumstances of the patient.

#### INSTITUTIONAL PROVISION FOR MOTHERS OR CHILDREN.

There are no special institutions in Bolton for the care of the unmarried mother and her child. Religious organisations have homes in Manchester, Bury and Prestwich to which Bolton girls are admitted before the birth of the baby and where they may remain some time after confinement.

The Bolton Association for the Welfare of Women and Girls does valuable work in various unobtrusive ways. Its activities for the social welfare of young women and girls have a bearing on many public health activities. The headquarters of the association in Westbrook Street are used as a temporary home for young women and girls in difficulty or danger pending restoration to their friends. Through its executive officer, Miss Marion Howard, the association accomplishes important social work of various kinds contributing to the well-being of women and girls in need of assistance and guidance.

The Public Assistance Committee make provision for homeless children in the nursery in Fishpool Institution and later in the Hollins Cottage Home.

Eden's Orphanage is an endowed institution which was opened in 1879. It is intended for the reception, support and education of orphan destitute children. Priority is given to children of parents who resided in the Astley Bridge district of Bolton. There are about 40 children in residence.

The Chadwick Orphanage is situated in the Haulgh district of Bolton. Girls only are admitted who are deprived of one or both parents. There are 17 children in residence.

The Manchester Diocesan Branch of the Church of England Incorporated Society for Providing Homes for Waifs and Strays maintains a home in Radcliffe Road, Bolton, where accommodation is provided for 40 girls. The object of the Society is to rescue girls, aged 3 to 16 years, who are in evil surroundings, and to educate and train them for domestic service.

## HEALTH VISITORS.

On the receipt of a notification of a birth it is the duty of the health visitor to visit and to give advice and help as to the care of the child. In practice it has been found necessary to associate their work with child welfare centres with a medical officer in attendance. The Public Health Committee have continued this work during the year in partnership with the Mother and Child Welfare Association.

The Association was the Bolton pioneer in organizing educational work amongst mothers, and commenced its activities in 1908. In 1916 an obligation was placed on the Local Authority to participate in the work. The Bolton Health Authority was fortunate in being able to co-operate with the Association and a partnership commenced which has been of inestimable value to the mothers and children of Bolton.

There has been no work in a health department which has been so fruitful in its results as that of the health visitors. Their duties are growing more important each year and they continue to demonstrate the essential value of real preventive medicine.

The following table shows the work done by the health visitors :—

### VISITS BY HEALTH VISITORS.

Primary birth enquiries .. .. .	2,132
Visits to children, 1—5 years .. .. .	4,823
Primary visits to expectant mothers .. .. .	288
Revisits to infants under 1 year .. .. .	4,949
Revisits to expectant mothers .. .. .	247
Visits to puerperal fever cases .. .. .	2
Visits to ophthalmia cases .. .. .	14
Stillbirth enquiries .. .. .	150
Death enquiries made (under one year of age) .. .. .	110
"    "    "    (maternal) .. .. .	8
Visits to midwives' houses .. .. .	146
Visits—Children Act .. .. .	77
Miscellaneous visits .. .. .	392
<b>Total visits .. .. .</b>	<b>13,338</b>

As a result of their visits the health visitors reported 30 nuisances to the Medical Officer of Health, and referred five cases to the N.S.P.C.C.

The following centres are conducted under the auspices of the Mother and Child Welfare Association. The medical officers are provided by the Public Health Committee.

ADDRESS OF CENTRE.

DAY AND TIME  
OF MEETING.

The Friends' School Room, Tipping Street	..	Monday	3 p.m.
Chalfont Street Methodist School	.. ..	Monday	3 p.m.
Halliwell Road Free Church	.. ..	Tuesday	3 p.m.
Victoria Methodist School, Grecian Crescent	.. ..	Tuesday	3 p.m.
Victoria Hall, Knowsley Street	.. ..	Wednesday	3 p.m.
St. Chad's School, Belvoir Street	.. ..	Wednesday	3 p.m.
The Saviour's Church House, Deane Road	.. ..	Thursday	3 p.m.
Daubhill Methodist School, Derby Street	.. ..	Thursday	3 p.m.
Delph Hill Methodist School	.. ..	Friday	3 p.m.
Tonge Moor Congregational School	.. ..	Friday	3 p.m.

STATISTICS FOR THE YEAR ENDED 31st DECEMBER, 1937. INFANT CLINICS.

Clinic	Average attendance per session	Number who attended for the first time		Total attendances by Children		Number of meetings during the year
		Children		by Children		
		Under 1 yr. of age	Between the ages of 1 and 5 yrs.	Under 1 yr. of age	Between the ages of 1 and 5 yrs.	
1. Tipping Street ..	31.0	70	5	720	647	44
2. Daubhill ..	43.8	120	14	1147	828	45
3. Halliwell ..	54.3	158	17	1673	774	45
4. Grecian Crescent ..	66.7	159	28	2041	963	45
5. Victoria Hall ..	61.1	153	25	1597	1032	43
6. Saviour's ..	57.1	162	29	1627	887	44
7. Chalfont Street ..	50.8	125	14	1494	743	44
8. St. Chad's..	43.4	112	15	1198	759	45
9. Delph Hill ..	74.0	152	22	1936	1101	41
10. Tonge Moor ..	39.9	107	14	930	747	42
	522.1	1318	183	14363	8481	438

**Assistance given to Expectant and Nursing Mothers and Children  
under 5 years of age.**

85,493 quarts of new milk were given to 1,732 persons.

14,552 lbs. of dried milk were given for the use of 597 infants.

1,560 lbs. of malt and oil were given to 647 children.

All cases receiving assistance are kept under observation and, unless under treatment by a doctor, attend the infant clinics or the ante-natal centres.

**DAY NURSERY.**

The first Day Nursery in Bolton was opened in June, 1918, by a voluntary association known as the Bolton Day Nursery Association. Nuttall House, Wentworth Street, was leased and occupied until February, 1931, when more suitable premises at 41, Arkwright Street, in a populous working class district, were acquired at a cost of £700. The extension, adaptation and equipment of the new premises cost approximately £1,900, towards which the Bolton Corporation contributed £500 in addition to the annual grant of £575.

The premises were adapted for the reception of 30 children, and contain an office, reception room, babies' room, toddlers' room, staff rooms, kitchen, verandah, bathrooms, staff bedrooms and the usual offices.

Children are received between the ages of three months and five years. Mothers who go out to work may leave their children at the Nursery from 7-0 a.m. to 5-30 p.m. on Monday to Friday, and from 7-0 a.m. to 1-0 p.m. on Saturday. For this service a charge of 9d. per day and 6d. for half a day is made, but where there is more than one child in the family the charge is 9d. per day for the first child and 6d. per day for the others.

The staff consists of the following :—Matron, staff nurse, four probationers, two maids, a part-time sewing maid and a part-time cleaner.

On the 12th August, 1936, the Bolton Day Nursery Association offered the Day Nursery and the assets of the Association both real and personal as a free gift to the Corporation. The Corporation accepted the gift and took over complete control on the 1st April, 1937.

The following are the statistics for the year ended 31st December, 1937 :—

Total number of attendances of children :—

Whole day under 3 years .. .. .	5,254
Whole day 3 years and over .. .. .	1,739
Total whole day .. .. .	6,993
Half day under 3 years .. .. .	584
Half day 3 years and over .. .. .	175
Total half day .. .. .	759
Average for year (whole day) .. .. .	28·3
„ „ „ (half day) .. .. .	17·2
No. of days open during the year :—	
Whole day .. .. .	247
Half day .. .. .	44
Actual No. of children who have attended .. .. .	38
Average No. of attendances per child .. .. .	204

#### MESSAGE AND ARTIFICIAL SUNLIGHT TREATMENT FOR INFANTS.

Treatment is provided for any debilitated and rickety children who are in attendance at the Child Welfare Centres. The treatments are given in the premises of the Mother and Child Welfare Association in St. George's Road.

The Massage Clinic was held as follows :—

Monday, Tuesday, Wednesday, Thursday and Friday, 10 a.m. to noon and 2 p.m. to 5 p.m.

The number of cases treated in 1937 was 92, and these received a total of 2,028 treatments.

Most of the cases benefited very much by the treatment.

The treatment is given by Miss M. L. Bruckshaw, C.S.M.M.G., who is a part-time employee of the Public Health Department.

The Artificial Sunlight Clinic, of which the Medical Officer is Dr. Mary E. Boullen, and the operator Miss Charnock, C.S.M.M.G., meets three times a week at the premises of the Mother and Child Welfare Association in St. George's Road.

The number of cases treated in 1937 was 73, and these received a total of 1,482 treatments. There has been no change in the routine of the clinic.

# INFANT LIFE PROTECTION.

The duty of supervising children who are nursed and maintained for reward was transferred from the late Board of Guardians to the local authority by the Local Government Act of 1929. The Children and Young Persons Act, 1932, amended the law relating to infant life protection. Any persons intending to receive children under 9 years of age for reward must notify the local authority not less than seven days before the first child's reception. Infant protection visitors must be appointed by the local authority to supervise the nursing and general well-being of the children and to ascertain the suitability of the foster parents and their homes for the care of young children.

All the health visitors have been appointed infant protection visitors. There were 9 children on the register at the end of the year. All these children are visited frequently by the health visitors in order to satisfy themselves that they are receiving proper care.

# ORTHOPÆDIC TREATMENT.

The scheme described in last year's report continues to operate successfully.

# MATERNITY AND NURSING HOMES.

## **Nursing Homes Registration Act, 1927.**

	Maternity Homes and Nursing Homes	Maternity Homes only	Nursing Homes only
No. of Homes on the register when the Act came into operation ..	—	3	—
No. of applications for registration	3	1	2
No. of Homes registered .. ..	3	1	2
No. of Homes on the register on 31st December, 1937 .. ..	1	—	1

No orders have been made refusing or cancelling registration.

No applications have been made for exemption from registration.

Since the Act became operative seven homes have been closed voluntarily and the registrations cancelled.

The two homes on the register at the end of the year provided accommodation for patients as follows :—

Maternity patients .. .. .	4
Other patients .. .. .	32

Byelaws made under the Act of 1927 were approved and adopted by the Council on the 5th February, 1930, and these were allowed by the Ministry of Health on the 20th March, 1930.







SECTION III.

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Sanitary Circumstances.



## WATER.

The Public Analyst and Bacteriologist reports :- "The water supply of the Borough is derived from moorland drainage grounds which have been cleared of farms and, with one or two exceptions, of public footpaths.

The collected water is stored in reservoirs and purification effected by lime treatment followed by sand or mechanical pressure filtration.

Bacteriological examination of the whole of the supply is made weekly, and a chemical examination monthly. The water being of an acid nature before treatment, a careful watch is kept on reaction and plumbo-solvency.

The quality of the water during 1937 has been quite good and suitable as a domestic supply."

### Bacteriological Examination of Filtered Water.

The Public Analyst reports as follows on the bacteriological examination of the water supply during 1937 :—

Number of samples examined	..	..	..	245
Average Agar Count per 1 ml.	..	..	..	5

#### TYPICAL B. COLI.

Positive in 10 ml.	..	..	..	2	or	0·81%
Positive in 50 ml.	Negative in 10 ml.	..	..	26	or	10·61%
Positive in 100 ml.	Negative in 50 ml.	..	..	16	or	6·53%
Negative in 100 ml.	..	..	..	201	or	82·05%

#### B. WELCHII.

Positive in 50 ml...	..	..	..	2	or	0·81%
Negative in 50 ml.	..	..	..	243	or	99·19%

The Waterworks Engineer reports that 4 miles, 1,076 yards of water mains (comprising cast iron, steel and asbestos) varying from 3" to 6" in diameter, were laid within the Borough, and 1 mile, 63 yards of mains were re-laid with mains of equal or larger diameter.

## DRAINAGE AND SEWERAGE.

The Borough Engineer reports :—

“ During the past year, work has been commenced on the Croal Intercepting Sewer, which is the main intercepting sewer of the town. This sewer is  $5\frac{1}{2}$  miles in length and varies in diameter from 6ft. at the outlet end to 12 inch diameter at the higher. The construction in the larger diameter is of brickwork and concrete tubes, and glazed earthenware pipes for the smaller diameters.

Several old 20 inch sewers which were badly worn and crushed out of shape have been replaced with 12 inch earthenware pipes with cement joints. Thirty additional manholes have been constructed on the old sewers for more efficient ventilation and control.

Where possible, surface water sewers are laid in front streets and these discharge into the various watercourses flowing through the district or into mill reservoirs for industrial purposes.”

The Sewage Works Manager reports :—“ During the year under review three more 90 ft. diameter x 6 ft. deep nitrifying filters were installed. About two-thirds of the effluent from the activated sludge plant is now being subjected to intensive filtration.”

## CLOSET ACCOMMODATION.

The position of Bolton as regards closet accommodation at the close of 1920 and the close of 1937 is shown in the following table.

	Dec. 31st, 1920.		Dec. 31st, 1937.	
Fresh-water closets	..	11,062	..	39,278
Waste-water closets	..	15,219	..	14,749
Pail closets .. ..	..	6,302	..	417
Privy Middens	..	10,540	..	602

Nineteen privy middens, 8 pail closets and 13 waste-water closets were replaced by fresh-water closets in 1937.

There are still 600 privy middens and 417 pail closets existing where the absence of sewer, the possession of an indoor fresh water closet, or the proposed demolition of the property as insanitary or for street or town improvements make conversion impossible or unnecessary.

Where there is a fresh-water closet indoor, and a privy midden or pail closet outside, every effort is made to induce the owner of the property to provide a dustbin of approved size and construction in lieu of the privy or pail closet.

The Cleansing Superintendent has furnished me with the following information.

59.74     "     "     "     less than once weekly.

Pails, once to three times a week.

Incineration	..	..	..	45.51%
Salvage and Incineration	..			10.91%
Tipping	..	..	..	39.32%
Agricultural Purposes	..		..	4.26%

The method of emptying cesspools varies according to conditions and situations, but they are mostly emptied by means of buckets direct into a motor or horse-drawn tank. The refuse is either taken to the depôt to be treated for agricultural purposes or in some cases is discharged into the sewers.

## SANITARY INSPECTION.

The nature and extent of the work done by the Sanitary Inspectors is shown in the following statement :—

### GENERAL INSPECTIONS.

Houses	..	..	..	..	..	..	1917
„ Revisits	..	..	..	..	..	..	6006
Newly-infected houses	..	..	..	..	..	..	708
Schools	..	..	..	..	..	..	18
Common lodging-houses	..	..	..	..	..	..	134
Houses let in lodgings	..	..	..	..	..	..	107
Factories	..	..	..	..	..	..	92
Workshops	..	..	..	..	..	..	57
Workplaces	..	..	..	..	..	..	19
Bakehouses	..	..	..	..	..	..	187
Offensive Trades	..	..	..	..	..	..	22
Dairies, Cowsheds, and Milk-shops	..	..	..	..	..	..	234
Conversion of Closets	..	..	..	..	..	..	57
Drains	..	..	..	..	..	..	243
Miscellaneous	..	..	..	..	..	..	3461

### NUISANCES FOUND.

Houses, workshops, cowsheds, etc., needing limewashing	..	..	..	..	..	224
House roofs, walls, floors, etc., in bad repair	..	..	..	..	..	1197
Insan. or insufficient closet accommodation	..	..	..	..	..	13
Ashpits or pails in bad repair	..	..	..	..	..	37
Defective or choked drains	..	..	..	..	..	96
Yards in bad repair	..	..	..	..	..	64
Animals kept as a nuisance	..	..	..	..	..	1
Miscellaneous	..	..	..	..	..	190

### ACTION TAKEN.

Letters written	..	..	..	..	..	626
Informal notices served	..	..	..	..	..	603
Verbal notices	..	..	..	..	..	123
Legal notices served	..	..	..	..	..	172

### DISINFECTIONS.

Houses disinfected	..	..	..	..	..	849
Articles disinfected	..	..	..	..	..	3879
Articles destroyed	..	..	..	..	..	221

### COMPLAINTS.

From Public	..	..	..	..	..	248
From Factory Inspector	..	..	..	..	..	22
Reports on complaints to Factory Inspector	..	..	..	..	..	20

PLACES UNDER INSPECTION.

Common lodging-houses .. .. .	27
Houses let in lodgings .. .. .	172
Factories .. .. .	355
Factory Chimneys.. .. .	259
Workshops and Workplaces .. .. .	812
Bakehouses .. .. .	311
Outworkers' Premises .. .. .	5
Offensive trades .. .. .	23
Slaughterhouses .. .. .	32
Cowsheds .. .. .	276
Milk-shops .. .. .	559
Public Sanitary Conveniences .. .. .	29
Travelling Vans .. .. .	130

**Common Lodging-houses.**

The number of registered common lodging-houses in Bolton is 27.

The ward distribution of these common lodging-houses and the accommodation they afford is as follows :—

Ward.	Houses.	Rooms.	Beds.
Exchange .. .. .	7 ..	36 ..	141
East .. .. .	16 ..	94 ..	557
Church .. .. .	2 ..	18 ..	186
Derby .. .. .	1 ..	6 ..	31
West .. .. .	1 ..	17 ..	84

ACCOMMODATION FOR THE SEXES.

Description.	Houses.	Males.	Females.	Couples.
Males only .. .. .	19	820	..	..
Females only .. .. .	1	..	56	..
Males and Females .. .. .	1	26	12	..
Females and Couples .. .. .	3	..	23	19
Males and Couples .. .. .	2	17	..	5
Males, Females and Couples	1	10	6	5
	27	873	97	29

The demand for common lodging-house accommodation has greatly diminished in the past few years and is still steadily falling.

The Inspectors report that of the accommodation available in the common lodging-houses the average amount occupied is about 60% at the present time.

Prices for beds vary to the following extent :—

Single beds from 7d. to 1½, the latter price being for cubicles.  
Double beds 1½ and 1¾.

### Houses Let in Lodgings.

Byelaws relating to houses let in lodgings or occupied by members of more than one family made in 1898 were repealed in 1932. These byelaws had become obsolete, mainly on account of the exemption clauses in the matter of rateable value and rent payable placing the houses let in lodgings outside their scope.

The Council have approved and adopted new byelaws containing no exemption clauses as regards rateable value or rent and these have been approved by the Ministry of Health.

The byelaws provide amongst other matters, for :—

- (1) the registration and inspection of such houses,
- (2) enforcing drainage and promoting cleanliness and ventilation,
- (3) securing the adequate lighting of every room,
- (4) requiring provision adequate for the use of and readily accessible to each family of—
  - (i) closet accommodation,
  - (ii) water supply and washing accommodation,
  - (iii) accommodation for the storage, preparation and cooking of foods.

None of the houses so let in Bolton was built for use as a lodging-house and generally they were intended for the use of one family only.

The byelaws do not apply to any house in which the landlord resides and not more than one family is lodged.

These lodging-houses are largely occupied by families who have no furniture of their own and who cannot afford the responsibility of separate tenancy.

Constant supervision by the Sanitary Inspectors is essential, as this sub-letting of houses has a definite tendency to create slums. When necessary structural alterations have been effected to attain the byelaw standard, the premises are in most cases visited weekly for evidence of overcrowding, uncleanliness or the lack of ventilation.



### Vans.

The number of living vans in Bolton at the close of 1937 was 7, nine less than last year. Eight have been demolished under the provisions of the Housing Act, 1936. The procedure for the demolition of the remaining vans has been commenced.

Particulars of the location and occupation of the vans are set forth below :—

Situation.	No. of Vans.	Occupants.	
		Adults	Children
31, Bridgeman Street .. .. .	2	3	—
Cheetham Court .. .. .	1	1	2
Field adjoining Withins Lane .. .. .	1	1	—
Shurmer Street .. .. .	1	2	—
Land at top of Blake Street, Halliwell .. .. .	1	2	—
Land belonging to Bleachworks, Barrow Bridge .. .. .	1	2	—
	7	11	2

### Offensive Trades.

Offensive trades are being carried on in 23 different premises in Bolton. The nature of these trades and their distribution in the wards of the town is shown in this table :—

OFFENSIVE TRADES.

Trade.	Added Area.	West.	Halliwell.	Bradford.	Derby.	East.	Church.	North.	Rumworth.	Exchange.	TOTAL.
Tripe Boilers	1			2			1				4
Fellmongers and Tanners		1		1							2
Hide and Skin Depots										1	1
Gut Scraping				1							1
Blood Boiler							1				1
Soap Works	1										1
Chemical Works						1	1				2
Muriatic Acid Works	1										1
Tar and Ammoniated Sulphate Works	1										1
Brick Works	6		1						1		8
Knackers' Yard							1				1
Total Offensive Trades	10	1	1	4		1	4		1	1	23

One nuisance arose in connection with the aforesaid trades. This was immediately remedied.

### FACTORIES AND WORKSHOPS.

In accordance with the provisions of Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required to make to the Secretary of State for the Home Office the following report which gives in addition to other information, the total number of defects found and notices served.

1.—INSPECTION.

Premises.	Number of		
	Inspec- tions.	Written Notices.	Prosecu- tions.
Factories .. .. .	115	1	—
(Including Factory Laundries)			
Workshops .. .. .	223	1	—
(Including Workshop Laundries)			
Workplaces .. .. .	17	—	—
(Other than Outworkers' premises)			
Total .. .. .	355	2	—

2.—DEFECTS.

Particulars	No. of Defects,			Number of Prosecu- tions
	Found	Remedied	Referred to H.M. Inspector	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness .. .. .	6	6	—	—
Want of ventilation .. .. .	2	—	—	—
Overcrowding .. .. .	—	—	—	—
Want of drainage of floors .. .. .	—	—	—	—
Other nuisances .. .. .	—	—	—	—
Sanitary accommodation {insufficient .. .. .	4	2	—	—
{unsuitable or defective .. .. .	8	6	—	—
{not separate for sexes .. .. .	—	—	—	—
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bake- house (s. 101) .. .. .	1	—	—	—
Other offences .. .. .	3	1	—	—
(Excluding offences relating to outwork and offences under the Sections men- tioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921.)				
Total .. .. .	24	15	—	—

\*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

There was no outwork found to be carried on in unwholesome premises during the year.

## SHOPS AND WAREHOUSES.

The Shops Act, 1934, came into operation on December 30th, 1934. It contains important provisions regulating the employment of young persons under the age of eighteen, and for securing improved arrangements for the health and comfort of all shop workers and young persons alike. The sections of the Act which deal with the arrangement for the health and comfort of shop workers are administered by the Public Health Department. The requirements of the Act provide for adequate ventilation, reasonable heating and sufficient lighting. Suitable and sufficient sanitary conveniences and washing facilities must be provided. It is further laid down that where persons take their meals in a shop they must be provided with facilities for taking them in reasonable comfort. The question of the administration of the Shops Act calls for further consideration as it has not been possible for the existing staff and inspectors to carry out their duties in relation to the Act in more than a perfunctory manner. The administration of the whole Act has been considered by the Council without a permanent decision, but if the sections relating to the health and comfort of the shop workers are to be properly administered an additional sanitary inspector will be necessary.

## SMOKE ABATEMENT.

During the year 64 smoke observations were made, with the following results.

NO. OF OBSERVATIONS.		RESULT.
24	..	No black smoke
3	..	$\frac{1}{2}$ min. black smoke
1	..	$\frac{3}{4}$ " "
7	..	1 " "
2	..	$1\frac{1}{4}$ mins. "
13	..	$1\frac{1}{2}$ " "
6	..	$1\frac{3}{4}$ " "
1	..	2 " "
1	..	$3\frac{1}{2}$ " "
1	..	4 " "
1	..	7 " "
1	..	$7\frac{1}{2}$ " "
1	..	8 " "
1	..	9 " "
1	..	18 " "

Six observations of chimneys were taken for the emission of grit.

Preliminary Notices served .. .. .	6
Cases reported to Public Health Committee .. ..	4
Warnings given .. .. .	6
Statutory Notices served.. .. .	1
Magistrates' Orders to abate nuisance obtained ..	1
Prosecutions .. .. .	1
Amount of fines .. .. .	£10

During the year complaints were received regarding offensive gases being emitted from a waterproofing factory.

Representations were made to the firm concerned and a large plant was installed for the recovery of the gases, and the abatement of the nuisance.

### Swimming Baths and Pools.

The local authority provides swimming pools in three establishments in the town. The High Street Baths were the first owned by the Corporation. They were built in 1902. The building contains a plunge bath, 75 feet long by 25 feet wide, and slipper baths. During the year under review the High Street Baths were reconditioned at a cost of approximately £3,600 and are now thoroughly in accordance with modern standards and ideas. In 1920 the Corporation purchased and modernised the Bridgeman Street Baths which previously had been privately owned. There are two plunge baths, the larger being 75 feet by 25 feet, and the smaller 43 feet by 19 feet, in addition to slipper baths. In 1924, the Moss Street buildings were erected containing a plunge 75 feet by 30 feet and a smaller plunge 60 feet by 21 feet. Slipper baths and a public wash-house were included in the same buildings.

The Corporation also owns Turkish Baths situated in Great Moor Street.

In all the Corporation swimming baths the water is cleansed by continuous filtration and controlled chlorination. Regular examination of the waters by the Borough Analyst shows the purification systems to be highly efficient.

Swimming baths are also provided in three schools in the area. The Bolton School has a plunge bath with modern continuous filtration and chlorination plant. Two schools of the local education authority have swimming pools. Whitecroft Road School bath is modern in its filtration and chlorination plant. The Lostock Open Air School bath is of the "fill and empty" type but having regard to the small number of users it is satisfactory.

There are no privately owned swimming pools open to the public in this area.

## ERADICATION OF BED BUGS.

During the year, the new disinfestation and disinfecting station of the Housing Department was opened and the Director has furnished me with the following description of the plant.

The station is situated in Bridgeman Street, adjacent to the Maintenance and Repairs Depôt and the buildings and apparatus utilised are as follows :—

1. Brockhouse Self-Stoke Heater unit for the purpose of generating steam for the heating of the gas chamber, bedding chamber and the drying chamber.
2. Manlove Alliott Steam Disinfector for treatment of bedding and similar articles.
3. Fordson Motor Tractor with trailer van container. This van container is designed to hold the chattels of three average-sized families. The van has roller shutters to the sides which are opened during the gassing process to permit of free circulation of hydrogen cyanide.

After the furniture has been collected in the Department's van (the several tenants' chattels are separated by iron hurdles at the time of loading the van), the van is backed into the gas chamber and the doors are hermetically sealed. The motor unit is then available for other work whilst the gas chamber is occupied by the van.

The hydrogen cyanide (Zyklon B. form) is contained in tins and a tin is installed in a cutting machine inside the gas chamber before sealing. This cutting machine is hand operated from outside and there is an inspection window to see that the cutting process is complete. A thermometer is also installed and can be seen from this window in order that the heat of the chamber can be gauged.

The chamber is heated by hot air ducts and circulation of the air is brought about by electric fans operating through steam heated radiators. The heat of the radiators is controllable and the air ducts are so constructed as to form the plant for the eventual gas extraction.

The van remains under full gas for approximately two hours, and in summer, assisted by light air offering better working conditions, it is possible to carry out gassing three times per day. During the winter period and heavy days (fog, rain, etc.) the process is naturally impeded owing to the longer time taken in dispelling the gas from the chamber. Distance from which the furniture has to be collected also has a bearing on the speed or otherwise of the removals.

Whilst gassing is proceeding, beds and soft furnishings are dealt with in the Manlove Alliott Steam Disinfector, installed in a separate building adjacent to the gas chamber, and in turn, these articles are hung in a drying shed, from the ceiling of which air is blown by an electric fan through a heated radiator. Ducts are let into the base of the walls of the drying shed for outlet and thus a quick through draught of warm air is obtained. The bedding, etc., goes through the steam process and drying shed, whilst the furniture is in the gas chamber, and the treatment in each case takes the same time.

Slum tenants are visited prior to removal and are encouraged to hand over to the Department for destruction any old effects which should not be removed to the new houses. In certain cases, additional items of furniture and bedding are supplied to new tenants by the Department, and a hire purchase agreement for these is entered into with repayments by instalments over a period up to three years, according to the tenant's means.

This plant is operated by the Housing Department's own staff. During the year the Housing Department carried out 223 removals from slum clearance and other areas to new estates.

#### **Bug Infestation of Corporation Houses.**

During the year, a systematic inspection of all the houses on the several Corporation Housing Estates was carried out, to ascertain the amount of bug infestation and it was deemed necessary to fumigate 360 houses. The fumigation was carried out by a private firm of fumigation experts. In certain cases where bugs were only suspected, spraying with an insecticide was adopted as a precautionary treatment.

In the fumigation of Estate houses, the tenants concerned are required to remain away from their homes overnight. In certain cases, families have been unable to arrange temporary alternative accommodation, and in this event, the Department utilises any vacant houses on the same or nearest Estate for their temporary accommodation, the Department supplying such items of furniture and bedding as will meet the particular tenant's temporary need.

#### **Bug Infestation in Houses other than Corporation Houses.**

During the year, a total of 1,122 houses were examined in Clearance Areas and it was found that 403 houses were infested with bugs.

No definite information is available regarding bug infestation generally. It is known however that in certain areas of the town upwards of one-third of the houses are affected.

Experiments have been carried out with various proprietary insecticides with varying degrees of success. The most successful insecticide used, at the time of writing, was Zaldecide.







SECTION IV.

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Housing.



## HOUSING.

During the year further progress has been made in dealing with the unfit houses in the Five-year Programme.

Inspectors from the Ministry of Health held public inquiries with respect to sixteen Clearance Orders and four Compulsory Purchase Orders to which objection had been made by the owners. All these Orders were confirmed.

The areas concerned were :—

### Clearance Areas.

Area	No. of Houses	Persons to be displaced
Coe Street No. 1 .. .. .	22	41
Coe Street No. 2 .. .. .	8	27
Crook Street and Closes Street .. .. .	12	34
Carey Street and Edgar Street .. .. .	12	31
Gas Street and Hanover Street .. .. .	12	40
Ebenezer Street .. .. .	15	41
Kirk Street .. .. .	11	30
Bury Road No. 1 .. .. .	11	34
Bury Road No. 2 .. .. .	15	45
Emmanuel Street .. .. .	6	22
Cannon Street No. 1 .. .. .	18	44
Cannon Street No. 2 .. .. .	8	26
Hag End Brow .. .. .	11	20
Radcliffe Road and Chapel Place .. .. .	12	27
Dawes Street .. .. .	9	41
Sweet Green .. .. .	47	177

### Compulsory Purchase Orders.

Area	No. of Houses	Persons to be displaced
East Ward No. 1 .. .. .	83	284
East Ward No. 2 .. .. .	4	10
East Ward No. 3 .. .. .	5	15
East Ward No. 4 .. .. .	15	46

The following Clearance Orders were confirmed without Inquiry, the owners raising no objections.

Area					No. of Houses	Persons to be displaced
Lower Terrace	..	..	..	..	14	57
The Green	..	..	..	..	7	19
Radcliffe Road No. 1	..	..	..	..	10	26
Poplar View	..	..	..	..	3	10

It will be observed from the above list that the first of the East Ward Areas has been dealt with and confirmed by the Ministry of Health.

The Council will, in the near future, have to decide upon a definite policy in relation to this part of the town.

Adjoining the areas that have already been dealt with are a large number of unfit houses which could properly be dealt with under the provisions of the Housing Act, either by way of Clearance Areas or Compulsory Purchase Orders.

In determining the layout for the new houses to be built on the site of the present Compulsory Purchase Orders, consideration is being given to the possibility of future Clearance Area sites in the vicinity.

A number of Clearance Areas and Compulsory Purchase Orders are now in the hands of the Minister of Health and further areas are in course of preparation.

The provisions of the Housing Acts in relation to insanitary property have been carried out in co-operation with the Borough Engineer's Department and the Housing Department. In the consideration of insanitary property, the responsibility of advising the Public Health Committee is shared with the architectural section of the Borough Engineer's Department.

#### REPAIRS AND RE-CONDITIONING OF HOUSES.

During the year, 588 houses were re-conditioned or repaired as the result of informal or legal action by the Department.

This work takes up a good deal of the Sanitary Inspectors' time, in supervision and re-visiting, in order to ensure that the work is properly carried out.

There are a large number of houses in the Borough which require a systematic house-to-house inspection and the service of notices to prevent them coming within the scope of the Clearance and Demolition Sections of the Housing Acts. This cannot be done by the existing staff whilst the work on the Five-year Programme is proceeding.

# NEW HOUSES.

The number of new houses completed in 1937 was 769 as compared with 763 in 1936, 266 of these new houses were erected by the local authority and 503 by other bodies or persons.

The number of new houses completed in Bolton in each year since 1921 is as follows :—

Year.	Private Enterprise.	Municipal Schemes.	Total.
1921 ..	34	191	225
1922 ..	18	462	480
1923 ..	111	30	141
1924 ..	351	3	354
1925 ..	502	179	681
1926 ..	610	251	861
1927 ..	571	510	1,081
1928 ..	319	160	479
1929 ..	551	228	779
1930 ..	204	492	696
1931 ..	213	465	678
1932 ..	240	511	751
1933 ..	479	539	1,018
1934 ..	616	442	1,058
1935 ..	508	136	644
1936 ..	439	324	763
1937 ..	503	266	769

The following table shows the number of houses and the number of inhabitants per house in Bolton in certain years since 1901.

		Houses.	Inhabitants per House.
Census	1901 ..	36,177	4·64
	1911 ..	41,585	4·34
	1921 ..	42,475	4·28
	1931 ..	47,433	3·73
Estimated	1932 ..	48,589	3·65
	1933 ..	49,607	3·56
	1934 ..	50,615	3·48
	1935 ..	51,402	3·40
	1936 ..	52,118	3·31
	1937 ..	52,500	3·24

### Housing Acts, 1930, 1935 and 1936.

The following figures show the progress that has been made from the date on which the Housing Act, 1930, became operative to the 31st December, 1937.

Unfit houses demolished in clearance areas ..	204
Number of persons displaced from such houses ..	714
Individual unfit houses (Sec. 19) demolished ..	540
Number of persons displaced from such houses ..	1,686
Number of houses made fit as a result of statutory notice .. .. .	1,773
Insanitary houses demolished in anticipation of formal procedure .. .. .	67
Insanitary houses closed (but not demolished) on an undertaking of the owner not to use for habitation	75
Number of houses made fit as a result of informal notice preliminary to formal notice ... ..	5,345

### Housing Statistics, 1937.

#### 1. INSPECTION OF DWELLING-HOUSES DURING THE YEAR.

(1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) .. .. .	2,707
(b) Number of inspections made for the purpose ..	8,052
(2) (a) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925 .. .. .	1,486
(b) Number of inspections made for the purpose ..	3,014
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation .. .. .	812
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation .. .. .	770

2. REMEDY OF DEFECTS DURING THE YEAR WITHOUT SERVICE  
OF FORMAL NOTICES.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers .. ..	472
---	-----

3. ACTION UNDER STATUTORY POWERS DURING THE YEAR.

A. *Proceedings under Sections 9, 10, and 16 of the Housing  
Act, 1936.*

(1) Number of dwelling-houses in respect of which notices were served requiring repairs ..	160
(2) Number of dwelling-houses which were rendered fit after service of formal notices	
(a) by owners .. .. .	116
(b) by Local Authority in default of owners ..	22

B. *Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied .. .. .	42
(2) Number of dwelling-houses in which defects were remedied after service of formal notices	
(a) by owners .. .. .	8
(b) by Local Authority in default of owners ..	—

C. *Proceedings under Sections 11 and 13 of the Housing  
Act, 1936.*

(1) Number of dwelling-houses in respect of which Demolition Orders were made .. ..	122
(2) Number of dwelling-houses demolished in pursuance of Demolition Orders .. ..	185

D. *Proceedings under Section 12 of the Housing Act, 1936.*

- |     |   |   |
|-----|---|---|
| (1) | Number of separate tenements or underground rooms in respect of which Closing Orders were made .. .. .  | — |
| (2) | Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit .. .. . | — |

4.	NUMBER OF HOUSES OWNED BY THE LOCAL AUTHORITY UNDER THE HOUSING ACTS .. .. .	4,922
----	--	-------

**Housing Act, 1936, Part IV. — Overcrowding.**

- |    |       |  |       |
|----|-------|--|-------|
| A. | (i)   | Number of dwellings overcrowded at the end of the year .. .. .   | 769   |
|    | (ii)  | Number of families dwelling therein .. .. .  | 822   |
|    | (iii) | Number of persons dwelling therein .. .. .   | 5,366 |
| B. |       | Number of new cases of overcrowding reported during the year .. .. .   | 110   |
| C. | (i)   | Number of cases of overcrowding relieved during the year .. .. .   | 760   |
|    | (ii)  | Number of persons concerned in such cases .. .. .  | 5,230 |
| D. |       | Particulars of any cases in which dwelling-houses have again become overcrowded after the Local Authority have taken steps for the abatement of overcrowding .. .. . | 12    |
| E. |       | Number of cases relieved in Corporation houses .. .. .   | 7     |

**Review of Overcrowding Survey.**

The results of the overcrowding survey carried out in 1936 were given in detail in my last report.

All the cases of overcrowding have been reviewed during the later portion of the year.



It was found that of the 1,473 families that were overcrowded, 760 cases (53·2%) have been abated.

A table is appended (page 62) showing the causes which have operated to abate the overcrowding in the houses under review.

It will be seen from the table that 365 families have found other accommodation. It is possible that these families have re-crowded their new accommodation, but inability to trace the new addresses makes it difficult to give accurate information. The constant large movement of the working class population complicates record-keeping in relation to overcrowding.

The above figures suggest that the overcrowding in the Borough has been considerably reduced. On the other hand, a number of cases that were border line at the time of the survey have since become overcrowded. Periodical review has shown that 110 such families have become overcrowded during the year.

The work of issuing certificates for permitted numbers has proceeded during the year. The number of certificates issued is 1,415 for 23,700 houses.

For failing to comply with the Housing Act, 1936, in respect of necessary entries in a rent book, a landlord was fined 10/- for two offences.

REVIEW OF OVERCROWDING IN JANUARY, 1938.  
Means by which Overcrowding has been abated since survey in 1936.

WARD.	Removal to new accommodation	Death	Marriage of members of family	Removal of lodger or relative	Combination of preceding causes	Abated by Housing Department	Abated by Slum Clearance and Demolition	Total
Astley Bridge ..	10	—	3	—	—	7	—	20
Bradford ..	33	2	13	7	6	11	2	74
Church ..	16	—	1	1	1	6	1	26
Darcy Lever-cum-Brightmet ..	11	1	3	2	1	1	—	19
Deane-cum-Lostock ..	6	2	5	3	—	4	—	20
Derby ..	32	5	25	9	6	24	9	110
East ..	33	3	4	7	1	9	—	57
Exchange ..	12	1	—	—	1	4	1	19
Great Lever ..	11	—	3	5	1	1	—	21
Halliwell ..	31	1	16	10	5	6	1	70
Heaton ..	2	—	—	—	—	—	—	2
Hulton ..	6	1	9	1	2	—	—	19
North ..	15	—	3	1	2	2	—	23
Rumworth ..	17	3	3	8	9	7	—	51
Smithills ..	6	1	2	3	—	3	—	15
Tonge ..	14	3	12	1	1	9	—	40
West ..	110	4	15	16	8	21	—	174
Total ..	365	27	121	74	44	115	14	760

SECTION V.

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Inspection and Supervision  
of Food

(The Annual Report of the Veterinary Officer).



**MILK.**

**The Milk and Dairies Order, 1926.**

**COWKEEPERS, DAIRYMEN AND PURVEYORS OF MILK.**

Cowkeepers on register (1936)	..	..	..	..	122
„ added to register (1937)	..	..	..	..	—
„ discontinued (1937)..	..	..	..	..	2
TOTAL					120
Cowsheds on register (1936)	..	..	..	..	283
„ added to register (1937)	..	..	..	..	3
„ discontinued (1937)	..	..	..	..	10
TOTAL					276
Number of cows provided for in the cowsheds	..	..	..	..	3,260
Average number of cows kept during the year	..	..	..	..	2,685
Number of dairies and premises of milk purveyors on register (31st December, 1937)	..	..	..	..	776
Number of visits to farms for inspection of cattle, cowsheds and dairies	..	..	..	..	166
Number of cows examined on the farms	..	..	..	..	4,226

For the purpose of carrying out the provisions of the Milk and Dairies Order, the cows, cowsheds and dairies in the Borough are subject to regular inspection by your veterinary officer and a sanitary inspector of the department.

During the year, three new cowsheds have been erected with a total accommodation for 78 cows. Many alterations have been carried out in existing cowsheds, including drainage, reconstruction of defective floors, and improvements in the lighting and ventilation.

Two farms containing five cowsheds with a total accommodation for 93 cows have been brought up to the required standard for the production of “Accredited” Milk. A new dairy has been provided on each of these farms with the necessary facilities for the steam sterilization of all dairy utensils and equipment.

Two dairy farms have been closed during the year, the occupiers having given up the keeping of cows for the production and sale of milk.

### Milk Samples.

During the year, 220 samples of milk were taken and examined by the biological test for the presence of tubercle bacilli.

Fifty-four of these samples were obtained from milk produced within the Borough. Seven of the samples were taken from individual cows with suspected tuberculosis of the udder. One of the individual samples was found to contain tubercle bacilli and the affected cow was slaughtered under the provisions of the Tuberculosis Order. Forty-seven of the samples were taken from groups of cows on farms within the Borough, two of which were found to contain tubercle bacilli. Further examination of the cows from which the positive group samples had been obtained revealed two individual cows giving tuberculous milk, and these were dealt with under the Tuberculosis Order.

One hundred and sixty-six mixed samples were obtained from milk produced in the Lancashire County Area but retailed in the Borough. Twenty-four of these samples were found to contain tubercle bacilli. Notification under the Milk and Dairies (Consolidation) Act, 1915, was sent in each case to the County Medical Officer of Health and your Veterinary Officer was present at the subsequent examination of eight of the suspected herds. From the 24 suspected herds, thirty-six cows were discovered to be giving tuberculous milk and were slaughtered by the County Authorities under the Tuberculosis Order.

### Prosecutions under the Milk and Dairies Order, 1926.

Proceedings were taken and convictions obtained as follows :—

#### SECTION 28.

For returning in a dirty condition, empty churns in which milk had been delivered to them, a large firm of milk purveyors was fined £5 and 10/6 costs.

#### SECTION 31 (ii).

For filling bottles with milk on other than registered premises, two farmers were fined £1 each.

#### SECTION 33.

For conveying articles likely to contaminate milk in a vehicle at the same time as milk, a farmer was fined £2.

**Milk and Dairies (Consolidation) Act, 1915.**

On the 11th May, 1937, proceedings were taken and a conviction obtained as follows :—

**SECTION 6.**

For failing to have his name and address conspicuously inscribed on the vehicle from which he was selling milk, a farmer was fined 5/-.

**Milk (Special Designations) Order, 1936.**

The following licences were granted under this Order during 1937 :—

Producer's Licence to use the designation " Tuberculin Tested.".. .. .	2
Supplementary Licence to use the designation " Tuberculin Tested." .. .. .	1
Dealer's Licence to use the designation " Tuberculin Tested.".. .. .	1
Producer's Licence to use the designation " Accredited "	11
Supplementary Licence to use the designation " Accredited." .. .. .	2
Dealer's Licence to use the designation " Pasteurised " .. . (Licence is in respect of a Pasteurising establishment.)	1
Supplementary Licence to use the designation "Pasteurised"	1

**" Tuberculin Tested " Milk.**

Licences to produce " Tuberculin Tested " Milk have been granted by this department to two dairy farmers in the Borough. Every animal in each of these herds has been submitted to a veterinary examination and a prescribed tuberculin test twice during the year in accordance with the provisions of the Order.

**" Accredited " Milk.**

Licences to produce " Accredited " Milk have been granted by this department to eleven dairy farmers in the Borough. Every animal in these herds has been examined four times during the year, and mixed samples of milk taken from each herd have been examined by the biological test for the presence of tubercle bacilli. Two of these samples were found to contain tubercle bacilli. On further investigation two individual cows were discovered to be giving tuberculous milk and these were slaughtered under provisions of the Tuberculosis Order.

### Tuberculosis Orders of 1925 and 1931.

These Orders provide for the slaughter of every bovine animal found to be affected with any of the forms of the disease specified, namely :—Tuberculosis of the udder, induration or other chronic disease of the udder, tuberculous emaciation, and chronic cough accompanied by definite clinical signs of tuberculosis. Cattle which on veterinary examination are found to be suffering from one of the forms of tuberculosis specified above, are required to be slaughtered, compensation being paid to the owner.

The following table shows the number of animals examined under the Order, the number of animals slaughtered, and the form in which they were diseased :—

Total Number of animals examined	Number of animals slaughtered	Number with tuberculosis of udder	Number giving tuberculous milk	Number with tuberculous emaciation	Number with chronic cough and definite clinical signs of tuberculosis
307	14	2	Nil	3	9

### Prosecutions under the Tuberculosis Order.

On the 9th March, 1937, a cattle dealer was prosecuted and convictions obtained as follows :—

#### ARTICLE 2 (i).

For failing to give notice of disease in a cow suffering from a chronic cough and showing definite clinical signs of tuberculosis. Fined £10.

#### ARTICLE 11 (i).

For failing to isolate the cow, the same dealer was fined £5.

On the 21st October, 1937, a farmer was prosecuted and convictions obtained as follows :—

#### ARTICLE 2 (i).

For failing to give notice of disease in a cow suffering from a chronic cough and showing definite clinical signs of tuberculosis. Fined £5.

#### ARTICLE 11 (i).

For failing to isolate the cow, the same farmer was fined £5.



MEAT.

Public Health (Meat) Regulations, 1924.

These regulations require notification to the Local Authority of the time, day and place of any slaughtering. When written notice is given of fixed times of regular slaughtering throughout the year, no further notice is required. Wherever disease is found or suspected to exist in the carcase or internal organs of any animal during the course of slaughtering, notification of disease is required to be given to the Local Authority. Shops and stalls, and the transport and handling of meat are also controlled by the provisions of these regulations.

The following notices of slaughtering and of disease were received during 1937 :—

Written notice of regular slaughtering on fixed days.	13
Notification of slaughtering on other than fixed days.	189
Notification of suspected disease :—	
Relating to Cattle .. .. .	164
Do. Sheep .. .. .	12
Do. Pigs .. .. .	131
Do. Calves .. .. .	4
Total ..	<hr/> 311 <hr/>

The following table shows the number of animals slaughtered and inspected at the public abattoirs and private slaughterhouses in the Borough, with the diseased conditions grouped under two heads : (1) Carcases affected with disease *other than* tuberculosis ; and (2) carcasses found to be affected with tuberculosis *only*.

**Carcases Inspected and Condemned.**

	Cattle excluding Cows	Cows	Calves	Sheep and Lambs	Pigs
Total number killed and inspected	6,870	3,630	1,400	54,400	13,600
<b>All diseases except Tuberculosis</b>					
Whole carcasses condemned	2	15	8	18	9
Carcasses of which some part or organ was condemned	111	366	1	519	48
Percentage of the number inspected affected with disease other than tuberculosis	1.64	10.50	.64	.98	.42
<b>Tuberculosis only</b>					
Whole carcasses condemned	9	163	2	—	20
Carcasses of which some part or organ was condemned	62	800	1	—	559
Percentage of the number inspected affected with Tuberculosis	1.03	26.52	.21	—	4.25

### Slaughterhouses.

Slaughtering accommodation in the Borough is unaltered from last year. The private slaughterhouses continue to provide accommodation for most of the slaughtering, only about 25% of animals being slaughtered at the Public Abattoir.

The 16 private slaughterhouses are used as follows :—

For cattle, sheep and pigs	..	8 slaughterhouses.
For cattle and pigs	.. ..	1 slaughterhouse.
For cattle only	.. ..	1 slaughterhouse.
For pigs only	.. ..	6 slaughterhouses.

During the year, 2,323 visits were paid by the veterinary inspector and the meat inspector to the abattoir and private slaughterhouses.

### Slaughter of Animals Act, 1933.

Under this Act it is an offence to slaughter animals intended for human food, except by a mechanically operated instrument. With one exception the provisions of this Act have been well observed. During the year, 2 licences and 90 renewal licences were granted to slaughtermen.

**Prosecution :** SECTION 1 (i), 4 and 5.—On the 23rd December, 1937, a butcher was prosecuted and fined 40/- for failing to stun sheep before slaughter.

Frequent visits were paid to the local knacker's yard during the year; conditions were satisfactory at all times.

CARCASES FOUND TO BE AFFECTED WITH DISEASE

Disease or Defect.	Examined				Action taken		Examined	Action taken			Examined	Action taken			Examined	Action taken		
	Cows	Bullocks	Heifers	Bulls	Whole carcase destroyed	Parts and Organs destroyed		Calves	Whole carcase destroyed	Parts and Organs destroyed		Sheep	Whole carcase destroyed	Parts and Organs destroyed		Pigs	Whole carcase destroyed	Parts and Organs destroyed
Tuberculosis	963	36	22	13	172	862	3	2	1							579	20	5
Distomatosis	105	78	11	1		195						505		505				
Echinococcus	106	1				107										1		
Angioma	92					92												
Pneumonia	2				1	1										3	3	
Pleurisy	5	2	1			8	1			1						8		
Johne's Disease	4				4													
Abscess	9	4	3			16						1		1		2		
Mastitis	38					38												
Fevered	4				4													
Œdema	2				2							3	3					
Decomposition		1			1							9	9			1	1	
Bacterial Necrosis	9	3	2			14												
Cirrhosis		5				5										22		
Septicæmia	2				2													
Septic Nephritis		1			1													
Emaciation	1				1							1	1					
Cysticercus Tenuicollis												13		13		15		
Arthritis																2	2	
Pyæmia																1	1	
Jaundice																2	2	
Immaturity							6	6										
Joint ill							1	1										
Traumatism							1	1				5	5					
Nephritis	1					1												
Septic Metritis	1				1													
Totals	1344	131	39	14	189	1339	12	10	2		537	18	519	636	29			

Number of Organs Destroyed for Tuberculosis and Other Conditions  
in the Different Classes of Animals during 1937.

	Cattle.	Calves.	Sheep.	Pigs.	Total.
LUNGS :					
Tuberculosis ..	837	3	..	203	1,043
Other conditions..	143	9	87	16	255
HEARTS :					
Tuberculosis ..	368	2	..	148	518
Other conditions..	15	8	17	13	53
BOWELS :					
Tuberculosis ..	428	2	..	91	521
Other conditions..	24	8	17	12	61
STOMACHS :					
Tuberculosis ..	378	2	..	111	491
Other conditions..	25	8	17	11	61
SPLEENS :					
Tuberculosis ..	365	2	..	111	478
Other conditions..	21	8	17	11	57
LIVERS :					
Tuberculosis ..	574	2	..	169	745
Other conditions..	365	8	536	41	950
KIDNEYS :					
Tuberculosis ..	358	4	..	42	404
Other conditions..	38	16	36	20	110
HEADS :					
Tuberculosis ..	508	2	..	546	1,056
Other conditions..	21	8	17	5	51
TOTALS.. .. .	4,468	92	744	1,550	6,854

### Weight of Unsound Meat Destroyed.

	Number	tons.	cwts.	qrs.	lbs.
Beef Carcases ..	189	38	2	1	1
„ Fore Quarters ..	2	..	2	..	16
„ Offals ..	..	26	3	..	3
Mutton Carcases ..	18	..	5	..	4
„ Offals ..	..	..	6	3	15
Pork Carcases ..	29	1	13	1	24
„ Offals ..	..	3	6	3	2
Veal Carcases ..	10	..	3	1	1
„ Offals ..	..	..	1	..	1
Imported Meat ..	..	1	1	1	17
Total Weight ..	—	71	5	1	—

### Disposal of Meat Voluntarily Surrendered.

All unsound meat is disposed of in the Corporation destructor. The Public Health Department pays £4 per ton by way of compensation.

### OTHER FOOD STUFFS.

The following food stuffs and provisions were destroyed as unsound :

	tons.	cwts.	qrs.	lbs.
Fish .. .. .	1	6	2	6
Poultry and Rabbits .. ..	..	4	1	7
Fruit and Vegetables .. ..	4	6	2	..
Canned Foods and Provisions ..	..	6	..	21
Total Weight ..	6	3	2	6

### Merchandise Marks Act, 1926.

Under this Act, Orders in Council are made which provide for the compulsory marking of certain imported goods. The mark applied to these goods must definitely indicate the country of origin or alternatively bear the word " Foreign " in reference to goods imported from a foreign country, or the word " Empire " if imported from any part of the Dominions.

There has been no addition during the year to the list of articles to which the Orders apply ; nevertheless the time spent by the Food Inspector in enforcing the provisions of the Act is considerable.

The undermentioned imported goods are required to bear an indication of origin :—honey, fresh apples, currants, sultanas, raisins, eggs in shell, dried eggs, certain oat products, raw tomatoes, malt products, frozen or chilled salmon or sea trout, butter, bacon, ham, dead poultry, maize starch and cornflower, chilled, frozen and salted meat, and salt.

### Prosecution : Imported Goods (No. 7) Order, 1934.

#### SECTION 4.

For failing to cause imported meat to be marked with indication of origin, a butcher was fined £1.

### General Food Inspections.

The following table shows the number of visits paid to shops, stalls and stores :—

Beef Butchers	1,608	Provision Dealers	1,564
Pork Butchers	986	Fruiterers	1,453
Wholesale Meat Stores	364	Fishmongers	1,034
Food Preparation Premises	457	Street Hawkers	489
Markets	555	Meat Carriers' Vehicles	507

### Diseases of Animals Acts, 1894 to 1935.

Under these Acts, the Minister of Agriculture and Fisheries is empowered to make Orders to control the various scheduled diseases of animals, to prevent the entrance of others into Great Britain, and to regulate the transport of animals and poultry. These Orders are in most cases enforced by the Local Authority.

The following is a brief account of the work carried out in pursuance of the Orders made under the above Acts.



### **Anthrax Order of 1928.**

No outbreaks of this disease have occurred in the Borough during the year. The deaths of six cows have been reported to this department as having occurred without history of previous illness. In each case the premises were visited and blood smears taken, which, on microscopical examination, were found to be negative.

### **Foot and Mouth Disease.**

There have been no outbreaks of this disease in the Borough during the year. A considerable number of visits of inspection have been made to premises concerned with the Foot and Mouth Disease Orders relating to the boiling of animal food stuffs and to packing materials.

### **Parasitic Mange Orders of 1911 and 1918.**

Only one suspected case of Mange was reported during the year, and this, on investigation, proved to be negative.

### **Swine Fever Order of 1908.**

Three suspected cases of swine fever were reported in the Borough during the year. The premises were visited and on investigation each case was found to be negative.

### **Regulation of Movement of Swine (Amendment) Order of 1936 (No. 3).**

This Order controls the movements of swine from markets and pig dealers' premises, and no movements are allowed from such premises except on licence granted by an inspector of the Local Authority.

For this purpose, 29 licences authorising the movement of 154 pigs were granted by this department during the year.

### **Orders Relating to Poultry Diseases.**

POULTRY MARKETS AND RECEPTACLES (DISINFECTION) ORDER OF 1936.

THE FOWL PEST ORDER OF 1936.

POULTRY AND HATCHING EGGS (IMPORTATION) ORDER OF 1936.

These Orders which were made under the Diseases of Animals Act, 1935, are for the purpose of controlling certain contagious diseases of poultry. Weekly inspections have been made at the cattle market, and frequent visits have been made to other premises where live poultry are kept, in order to enforce the provisions of the Orders.



### **Warble Fly (Dressing of Cattle) Order of 1936.**

This order provides for the dressing of cattle infected with the maggots of the warble fly at monthly intervals from March to June each year. During February 1937, a suitable notice was published in the local press reminding farmers of their obligations under the Order.

### **Animals (Landing from Ireland, Channel Islands and Isle of Man) Order of 1933.**

In accordance with the provisions of this Order all movements of animals from the above-named Islands to a destination in Great Britain are controlled by licences issued by Inspectors of the Ministry of Agriculture and Fisheries.

Under the Order the following imported animals were received on licence in the Borough during 1937 :—

Cattle .. .. .	3,783
Sheep .. .. .	10,616
Pigs .. .. .	2,127

---

Total .. 16,526

On arrival at the premises to which they are licensed the Order requires the animals to be detained there for a period of six days. During the detention period the animals may be moved from the premises to a slaughterhouse under a further licence granted by an Inspector of the Local Authority.

For this purpose, 101 licences authorising the movement of 708 cattle and 1,978 sheep were granted by this department.

### **Inspection of Cattle Markets.**

The Cattle Market and Authorised Market for the reception and sale of imported animals have been visited each week when sales of animals and poultry were being held, for the purpose of inspecting all live stock, and afterwards, in order to supervise the cleansing and disinfection of the premises.

The following table shows the number of animals examined during 1937. The figures for the previous year are given for comparison :—

Year	Number of visits	Authorised Market	Cattle Market				
			Cattle	Calves	Sheep	Pigs	Total
1937	107	10	1,425	1,812	39	68	3,354
1936	115	Nil	1,809	1,725	Nil	51	3,585

#### Rats and Mice (Destruction) Act, 1919.

During the year, 69 rat complaints have been received from the occupiers of a variety of premises including fish shops, provisions stores, food preparation premises and private dwelling houses. In each case, the premises were visited and suitable advice and assistance given.

Prior to, and during Rat Week, copies of the Ministry's Advisory Leaflet, No. 49, and the Bulletin No. 30 on the "Destruction of Rats and Mice," were freely distributed to the occupiers of premises liable to rat or mice infestation.

As in previous years, rat catchers have been employed on the wholesale fish, fruit and vegetable markets, Market Hall, and at the Corporation destructor works.

From the results of investigation and records kept, it is interesting to note the steady decrease in the number of rats found on the various premises visited each year.

SECTION VI.

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Prevalence of and Control over  
Infectious and other Diseases.



## NOTIFIABLE INFECTIOUS DISEASES.

### PREVALENCE AND MORTALITY.

Below are shown the number of cases of notifiable diseases notified in Bolton in 1937 and the number of deaths resulting from each of these notifiable diseases.

#### NOTIFIABLE DISEASES (OTHER THAN TUBERCULOSIS) DURING THE YEAR 1937.

Disease.	Total Cases Notified.	Total Deaths.
Smallpox .. ..	—	—
Scarlet Fever .. ..	563	—
Diphtheria .. ..	222	23
Enteric Fever (including Paratyphoid) .. ..	5	1
*Pneumonia .. ..	171	136
Puerperal Fever .. ..	1	2
Puerperal Pyrexia .. ..	3	—
Cerebro-spinal Fever .. ..	8	2
Acute Poliomyelitis .. ..	1	—
Encephalitis Lethargica .. ..	1	4
Dysentery .. ..	—	2
Ophthalmia Neonatorum .. ..	4	—
Erysipelas .. ..	67	5
Malaria .. ..	—	—

\* The cases notified are Acute Primary and Acute Influenzal but the deaths include all forms of Pneumonia.

Under the provisions of the Public Health Act, 1936, the designation "Puerperal Fever" has been discarded for notification purposes. Since October 1st, 1937, all cases of "Puerperal Fever" have to be notified as "Puerperal Pyrexia."

The following table asked for by the Ministry of Health gives detailed information regarding all cases of notifiable infectious diseases in Bolton during 1937.

# NOTIFIABLE DISEASES DURING THE YEAR 1937.

Disease.	Cases Notified.													Cases admitted to Borough and other Hospitals.	Deaths.													At all Ages over 65 and 45 to 65	At all Ages over 65 and 45 to 65
	Cases Notified.														Deaths.														
	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65	At all Ages over 65 and 45 to 65	Under 1		1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 65					
Scarlet Fever ..	2	11	31	47	75	229	83	35	42	6	..	2	563	408	..	..	2	3	5	11	1	..	..	..	..	23			
Diphtheria ..	1	2	8	9	21	111	37	12	18	2	1	..	222	208	..	..	..	..	..	..	..	..	..	..	..	1			
Typhoid Fever ..	..	..	..	..	..	..	1	1	2	1	..	..	5	5	..	..	..	..	..	..	..	..	..	..	..	1			
Pneumonia ..	8	14	10	6	5	12	5	6	29	17	43	16	171	..	23	9	8	1	..	1	..	1	9	14	54	136			
Puerperal Fever ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2			
Puerperal Pyrexia ..	..	..	..	..	..	..	..	..	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..			
Cerebro-spinal Fever ..	3	1	..	..	..	1	..	1	1	..	1	..	8	6	1	1	..	..	..	..	..	..	..	..	..	2			
Acute Poliomyelitis ..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..			
Acute Poliomyelitis ..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..			
Encephalitis Lethargica ..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1	1	1	1	4			
Ophthalmia Neonatorum ..	4	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..			
Erysipelas ..	..	..	..	..	..	..	4	1	9	12	32	9	67	11	..	..	..	..	..	..	1	..	..	2	2	5			
Tuberculosis :	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
a. Pulmonary ..	..	3	2	1	7	..	1	16	35	21	41	3	117	99	1	3	1	..	1	1	7	32	16	33	3	92			
b. Non-pulmonary ..	..	..	..	..	..	..	..	9	16	5	3	..	57	23	1	..	..	..	..	..	3	4	1	1	1	18			

\* The cases notified are acute primary and acute influenzal, but the deaths include all forms of Pneumonia.

The notification-rate of any disease means the number of cases notified per 1,000 inhabitants.

# NOTIFICATION-RATES IN 1937.

	Bolton.	England and Wales.
Smallpox .. .. .	—	—
Scarlet Fever .. .. .	3.30	2.33
Diphtheria .. .. .	1.30	1.49
Enteric Fever .. .. .	.02	.05
Erysipelas .. .. .	.33	.37
Pneumonia .. .. .	1.00	1.36

It is again possible to report that no case of smallpox has occurred. The town has been free of smallpox since 1933, when one case, contracted outside of Bolton, was notified.

The incidence of scarlet fever has again been low, 563 cases being notified. This figure is 144 below the average number notified during the last 10 years. A relative freedom from scarlet fever can be anticipated in the next few years. The disease has been mild in type and has had no important bearing on the well-being of the patients apart from the possibility of deafness following ear complications. Uncomplicated cases have been discharged from hospital four weeks after the commencement of the disease. Cases have been nursed at home and not removed to hospital where home circumstances have permitted.

Diphtheria first became notifiable in Bolton in 1877, under the provisions of a Local Act. Since that date there has only been one year when more cases were notified than during the year under review. The incidence has not only been high but the type of the disease has been severe. There were 222 cases notified and the deaths numbered 23, giving a mortality-rate of 10.3%. The average mortality-rate for England and Wales is between 5% and 6%. The highest number of cases notified in any one week was 17, during the week ended 4th December, 1937. The cases were not confined to any particular area of the town but were widely distributed. Two hundred and eight of the 222 cases were isolated in hospital. More hospital accommodation had to be provided by discharging the tuberculosis patients from the isolation hospital and using the ward for the treatment of diphtheria cases.

One new case of encephalitis lethargica was notified. There were four deaths. One case of acute poliomyelitis (infantile paralysis) was notified.

### INFECTIOUS DISEASES NOT NOTIFIABLE.

There was a sharp epidemic of influenza in Bolton in the early part of the year. It commenced towards the end of the preceding year (1936) and reached its peak during the week ended February 6th, 1937, when 27 deaths were attributed to influenza. The total number of influenza deaths during the year was 104. The average number for the last 10 years, which includes the big epidemic year of 1929, is 84·7.

Eighty-eight of the 104 deaths occurred during January and February.

Amongst the 104 deaths attributed to influenza, pneumonia and other respiratory diseases complicated 77 cases. In 21 cases other complications occurred. Six deaths were attributed to influenza alone.

Bolton's influenza deaths from 1925 to 1937 are shown below :—

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Deaths	98	68	147	55	208	42	110	46	165	27	55	35	104

No accurate information can be obtained concerning the incidence of measles and whooping cough. The school teachers and the school attendance officers receive information concerning school children, but there is no information concerning pre-school children in whom the incidence of the disease is high. During the year there were epidemics of whooping cough and chickenpox among school children. The number of measles cases was lower than usual. Mumps was prevalent in many schools.

### Deaths from Infectious Diseases.

The deaths in Bolton attributed to the various epidemic diseases are shown in the following table for the years 1928 to 1937.

#### CAUSES OF DEATH FROM EPIDEMIC DISEASES.

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Smallpox .. ..	—	—	—	—	—	—	—	—	—	—
Scarlet Fever .. ..	1	4	3	2	1	10	2	3	1	—
Diphtheria and Memb. Croup	16	8	3	2	3	6	11	5	4	23
Enteric and Continued Fever	1	1	1	—	—	—	—	—	—	1
Measles .. ..	17	11	4	24	9	14	12	6	9	4
Whooping Cough .. ..	9	85	8	14	11	9	2	13	8	14
Diarrhœa and Enteritis										
under 2 years of age ..	17	18	27	17	12	17	10	9	8	4
Erysipelas .. ..	9	5	14	7	3	7	10	5	6	5
Puerperal Sepsis .. ..	3	6	6	3	3	5	1	7	1	2
Cerebro-spinal Fever ..	4	—	2	7	5	3	2	1	2	2
Encephalitis Lethargica ..	11	5	4	6	3	2	5	5	7	4
Influenza .. ..	55	208	42	110	46	165	27	55	35	104



A consideration of the above table shows that during the last ten years influenza, whooping cough and measles have been the chief causes of death from infectious disease, and that smallpox, scarlet fever, and enteric fever are no longer the formidable foes they were in the past. The decline in the mortality from infectious disease in the last fifty years has been very remarkable. The greatest advances have been made in the control of diseases due to environmental conditions. Thus enteric fever and cholera have declined in this country because of the improvements in our water supplies. Plague and typhus have disappeared because of changed environmental conditions. The epidemic diseases which are spread by more "personal" infection raise a different set of problems. Improved conditions of living with a reduction in overcrowding, and increased physical efficiency of the population as a fortification against infection, the isolation of avowed cases of the disease and the immunization of individuals against specific infections by such means as are at our disposal, all help towards the reduction of infectious disease. It is important to realize that although whooping cough, measles and influenza are not notifiable infectious diseases, they nevertheless call for adequate hospital accommodation for the treatment of severe and complicated cases whose home environment is unsatisfactory. It is the wise practice to make provision for these cases in an isolation hospital. The present accommodation in Hulton Lane Hospital does not allow of any general admission of non-notifiable infectious diseases. It is anticipated that the proposed cubicle isolation wards will allow of acceptance of a much more varied group of diseases than at present.

#### **WORK OF THE BOROUGH ISOLATION HOSPITAL, HULTON LANE.**

The incidence of infectious disease was relatively low until the last quarter of the year, when an epidemic of diphtheria filled the hospital.

No serious illness occurred amongst the nursing staff. One probationer nurse developed scarlet fever shortly after her entry into hospital and before she had been given her immunizing inoculation against the disease.

Seven nurses sat for State examinations. Four entered for the preliminary State examination, and three for the final examination for the fever nurses supplementary section of the State register. All the nurses passed their examinations.

#### **ADMISSIONS.**

##### **(a) SCARLET FEVER.**

Four hundred and fifteen cases were admitted to the wards of the hospital as scarlet fever. No deaths occurred. Four hundred of the patients admitted had pure scarlet fever. In 5 cases the scarlet fever was accompanied by chickenpox and in 3 cases by other acute diseases. Seven of the patients admitted as suffering from scarlet fever were

suffering from another disease. Four had tonsillitis, one had rubella and two had toxic erythema.

The following complications occurred :—

14	cases	had	adenitis.
27	„	„	otorrhœa.
2	„	„	rheumatism.
2	„	„	albuminuria.
1	case	„	mitral incompetence.
1	„	„	mastoiditis.

During the year, a trial was given to the use of one of the aminobenzenesulphonamide preparations in the treatment of scarlet fever. A British preparation of sulphanilamide was used. Alternate admissions were treated with sulphanilamide, the control cases receiving no specific treatment of any sort. There was no selection of cases, except that two children with bad scalds who were transferred from the Bolton Royal Infirmary with scarlet fever were excluded from consideration, as it was obvious that the scalds would require prolonged hospital treatment. In the alternation of cases a distinction was made between cases under 15 years of age, and cases of 15 years and upwards. Cases up to 14 were treated alternately, and cases over 14 were treated alternately. This was done because the number of older patients is so small that in the alternation of relatively few patients they might not have been equally distributed in the two groups.

The doses of sulphanilamide used were as follows :—

0 to 2 years	..	..	..	0·5	gram	in	24	hours.
3 „ 5	„	..	..	0·75	„	„	„	„
6 „ 10	„	..	..	1·0	„	„	„	„
11 „ 14	„	..	..	1·5	grams	„	„	„
15 upwards.	..	..	..	2·0	„	„	„	„

Administration was commenced immediately on admission and continued until the 10th day of disease. As the cases were admitted on varying days from the first to the sixth day of disease, the total amount of sulphanilamide administered to patients varied considerably. Tablets containing 0·25 gram were used, and administered two, three or four times daily, with water, after meals.

The age distribution of the groups of cases treated was as follows :—

Age in years.	Treated with Sulphanilamide.	No specific treatment.
0 to 2	3	6
3 „ 5	16	23
6 „ 10	16	5
11 „ 14	7	7
15 upwards	8	9

An examination of the figures shows that on an average the treated and the untreated cases were discharged at approximately the same time after the commencement of the disease. It should be stated that there was considerable pressure on beds in the hospital, and that uncomplicated cases were being discharged as soon after the 21st day of disease as possible. The treated cases were discharged 28·4 days after the commencement of disease, and the untreated cases 28·3 days after the commencement of disease.

Cyanosis occurred in four cases, and in two of these cases further sulphanilamide was withheld. In one case vomiting occurred after three days of treatment and jaundice after five days of treatment, when further sulphanilamide was withheld. In another case, eight days after treatment had ceased, a papular rash occurred on the limbs, vomiting occurred, and there was periorbital œdema. There was nothing abnormal in the urine, and it appears probable that sulphanilamide had a causative effect.

The complications which occurred in the treated cases were as follows :—

Otorrhœa	..	4
Adenitis	..	3
Arthritis	..	2
Tonsillitis	..	2

Complications attributed to sulphanilamide were cyanosis in four instances, vomiting and jaundice one case, and toxic rash and periorbital œdema one case.

The complications which occurred in the untreated cases were as follows :—

Otorrhœa	..	2
Otorrhœa with accompanying adenitis		2
Adenitis	..	6
Arthritis	..	2

An examination of the figures in relation to fifty cases treated with sulphanilamide and fifty cases untreated, made it apparent that there were no grounds for regarding sulphanilamide as a specific in the treatment of scarlet fever. Its use has been discontinued, and will not be resumed unless observers with abundant clinical material show that there are types of cases in which proper methods of administration of sulphanilamide are beneficial.

(b) DIPHTHERIA.

Two hundred and twenty cases sent in as diphtheria were admitted to the diphtheria wards. Twelve of the cases were found not to be suffering from diphtheria.

4 had tonsillitis.

2 had peritonsillar abscess.

2 had bronchitis.

4 had catarrhal laryngitis.

Four patients required tracheotomy.

Twenty of the diphtheria cases admitted died.

It has already been stated that only in one previous year (1919) has there been more diphtheria in Bolton. Dr. D. T. Robinson of the Liverpool University Bacteriological Department is carrying out an enquiry into the types of diphtheria organisms, and has been good enough to interest himself in the Bolton outbreak. He has examined swabs from a large number of cases, and has kindly sent the following summary of the results obtained with the Bolton strains:—

Total isolated.	Gravis.	Intermediate.	Mitis.
114	64	20	30

He writes, "The three types are well represented, though the series is much too small to be quite certain that the figures give a true indication of the type distribution in Bolton. It seems clear, however, that the incidence of the gravis and intermediate types is fairly high, and in view of the previous mild and sporadic character of the diphtheria in Bolton, it is reasonable to assume that these types are a fairly recent acquisition. If the experience of other areas is anything to go by, Bolton is not likely to get rid of the menace of these types for some time to come. Personally, I should not be at all surprised if next winter the disease becomes not only more widespread, but a good deal more severe, unless of course a large-scale immunization campaign is instituted."

(c) ERYSIPELAS.

Eleven cases were admitted. No deaths occurred.

(d) CEREBRO-SPINAL FEVER.

Six cases were admitted. The diagnosis was confirmed in five instances. One of the cases of cerebro-spinal fever died.

(e) PARATYPHOID FEVER.

Six cases were admitted, the diagnosis being confirmed in five of the cases.

(f) OTHER DISEASES.

Thirty-one cases of various other diseases were admitted. The diseases included marasmus, whooping cough, measles, parotitis, encephalitis, chickenpox and erythema.

(g) PULMONARY TUBERCULOSIS.

Thirty-five cases were admitted during the year. Seven cases were also admitted for observation. Ten of the patients died.

No. of Patients.	No. of Patients suffering from the following Diseases.					Total.
	Scarlet Fever.	Diphtheria.	Pulmonary Tuberculosis.	Other Tuberculous Diseases.	Other Diseases.	
Remaining, Dec. 31st, 1936	26	6	13	..	1	46
Admitted in 1937 ..	408	208	35	2	78	731
Total No. treated, 1937 ..	434	214	48	2	79	777
Discharged in 1937 ..	391	153	32	..	73	649
Died in 1937 .. ..	..	20	10	2	4	36
Remaining, Dec. 31st, 1937	43	41	6	..	2	92

VACCINATION.

The following is a summary of the return for 1936 made to the Registrar-General by the Vaccination Officer respecting the vaccination of children whose births were registered in the County Borough of Bolton from 1st January, 1936, to the 31st December, 1936, inclusive.

No. of Births registered .. .. 1,523

On the 31st January, 1938, of the above children :—

265 or 17·39% were successfully vaccinated,  
 1 or ·06% were insusceptible of vaccination,  
 None had had smallpox,  
 1,144 or 75·11% of their parents made the statutory declaration of conscientious objection,  
 68 or 4·46% died unvaccinated,  
 10 or ·65% were temporarily unfit to be vaccinated,  
 9 or ·59% had removed out of Bolton,  
 18 or 1·18% could not be traced,  
 and 8 or ·52% had not been duly vaccinated or otherwise accounted for.

The total number of certificates of successful primary vaccination of children under 14 received during the calendar year 1937 was 357, and the number of statutory declarations of conscientious objection received during the same period was 1,203.

The number of persons successfully vaccinated and re-vaccinated at the cost of the Bolton rates by the local Public Vaccinators during the year ended 30th September, 1937, was as follows :—

No. of successful primary vaccinations				
Under one year of age	..	..	..	244
One year and upwards	..	..	..	36
				<hr/> 280
No. of successful re-vaccinations of persons who had been successfully vaccinated at some previous time				
..	..	..	..	9
				<hr/>
Total vaccinations by Public Vaccinators	..			289
				<hr/>

### DISINFECTION.

There is a fully equipped disinfecting station at School Hill, near the centre of the town. Two motor vans are attached to this station. During 1937 the following work was done by the disinfecting station :—

Houses disinfected	..	..	..	..	849
Articles of clothing, bedding, etc., disinfected	..				3,879
Articles of clothing, bedding, etc., destroyed	..				221

Terminal disinfection after infectious disease is only carried out at the special request of the householder. A thorough cleansing with soap and water is generally recommended as the most effective method.

### CANCER.

The number of deaths from cancer during the year was 290, 175 females and 115 males. This figure is next to the largest number ever recorded in a year in Bolton.

The deaths ascribed to cancer have doubled in numbers in the last 30 years. This increase is recognised throughout the country as being due in a large measure to the increased proportion of older people in the population. Cancer is in the main a disease of the later years of life, and an increase in the average age of the population in itself accounts for an increase in the number of cases of cancer.



Research and investigation have not yet yielded results leading to any diminution in the total number of deaths from cancer. Valuable means for the successful treatment of the disease in its earlier stages are available. Unfortunately many cases of cancer do not come under medical supervision until the disease is too far advanced for successful cure. Some cases do not come under medical supervision until they are beyond even ameliorative treatment. It appears probable that better use might be made of the existing means of treatment. To this end it was suggested some years ago in a Ministry of Health Circular that local authorities should ascertain whether, and if so, in what ways environment, economic, social or other conditions of cancer patients affect the chances of cure or of relief from suffering. It has not been possible to carry out any investigation on these lines in Bolton, mainly because of the absence of administrative co-ordination between the hospitals and the general health services. It is hoped that in the near future by the unification of Townleys Hospital with the other health services of the town, together with the co-operation of the Bolton Royal Infirmary, it will be possible to make enquiries into the environmental conditions of cancer patients. A consideration of the findings may suggest methods by which the best use can be made of the facilities for early treatment which are already at our disposal. With the knowledge which is at present available, the practical problem for a Health Authority to solve is the best methods it can adopt for securing the treatment of the cancer patient in the earliest possible stages of the disease.

Bolton residents suffering from cancer are treated in the Bolton Royal Infirmary and Townleys Hospital. A number are also treated in the Manchester Hospitals. One hundred and six patients were admitted to Townleys Hospital during the year. Twelve of the cases were admitted after previous treatment at another hospital, and 94 were admitted without such previous advice or treatment. A few patients were treated in St. Mary's Hospital for Women and other Manchester Hospitals.

Exact figures of Bolton residents treated in the Bolton Royal Infirmary in 1937 are not available.

The value of radium in the treatment of cancer is well known. Its use is limited by reason of the amount available and its cost. The best use can be made of the supplies of radium available in this country by concentrating them in certain centres. The National Radium Trust has centred the radium supplies for this part of Lancashire in the Christie Hospital, Manchester. The Bolton Royal Infirmary has made arrangements whereby facilities of the Christie Hospital are available for local patients. A Medical Officer of the Christie Hospital attends the Bolton Royal Infirmary weekly and sees patients suffering from cancer. He advises on the procedure to be followed and carries out any radio-therapeutic treatment necessary. Any radium required is brought to

Bolton from Manchester. Some patients requiring special applications of radium are taken by ambulance to the Christie Hospital for necessary "moulds" and brought back to Bolton next day. Townleys Hospital has an arrangement with the Christie Hospital by which suitable patients are sent to Manchester and retained as patients there. Twelve patients were sent from Townleys to Christie Hospital last year, the Public Assistance Committee paying for the cost of the maintenance and treatment.

In addition to the payments made by the Bolton Royal Infirmary and the Public Assistance Committee for the services rendered to them by the Christie Hospital, the Public Health Committee makes an annual grant of £50 to the general work of the Hospital. Three years ago they made a donation of £100.

It is hoped that the best use will be made of the facilities which are available for the treatment of cancer, and if experience shows that the local authority has any further part which it can take in the fight against the disease that sympathetic consideration will be given to any proposals which are made.



The following table shows the number of deaths from cancer, and the cancer death-rate in Bolton for the years 1902 to 1937.

**Deaths from Cancer in Bolton in the years 1902-1937.**

Year.	No. of deaths.		Total.	Cancer Death-rate.
	Males.	Females.		
1902	51	73	124	·73
1903	32	72	104	·60
1904	45	88	133	·77
1905	57	76	133	·76
1906	40	74	114	·65
1907	45	75	120	·68
1908	53	69	122	·80
1909	90	84	144	·83
1910	58	92	150	·83
1911	67	84	151	·83
1912	80	88	168	·82
1913	72	110	182	·98
1914	77	96	173	·93
1915	78	103	181	1·04
1916	60	100	160	·94
1917	73	93	166	1·01
1918	85	102	187	1·16
1919	72	104	176	·99
1920	96	107	203	1·10
1921	86	128	214	1·17
1922	88	104	192	1·05
1923	101	113	214	1·17
1924	123	121	244	1·34
1925	108	132	240	1·33
1926	109	127	236	1·33
1927	116	116	232	1·30
1928	119	126	245	1·35
1929	113	91	204	1·12
1930	107	133	240	1·32
1931	109	144	253	1·41
1932	105	126	231	1·29
1933	116	119	235	1·32
1934	127	130	257	1·45
1935	126	168	294	1·68
1936	124	151	275	1·59
1937	115	175	290	1·70

The above death-rates are crude death-rates. This means that they are not corrected for the changes in the age and sex distribution of the population.

The following table shows the age and sex distribution of all persons who were certified as having of cancer in Bolton in 1937. The table shows also the localization of the disease.

### DEATHS FROM CANCER, 1937.

Age and Sex Distribution, and Localization of Disease.

Lesion	Sex		AGE																
			0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	
	M.	F.																	
Buccal Cavity	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	
Jaw .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Mouth .. .. .	5	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	..	1	
Pharynx .. .. .	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	
Tongue .. .. .	5	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	1	..	
Other Sites .. .. .	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	
	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	
TOTAL BUCCAL CAVITY	17	..	..	..	..	..	..	..	..	..	..	..	..	1	4	5	6	1	
	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	
DIGESTIVE ORGANS	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Gall Bladder .. .. .	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	
Intestines .. .. .	20	..	..	..	..	..	..	..	1	..	..	1	..	3	7	3	3	1	
	..	25	..	..	..	..	..	..	..	..	..	1	3	2	7	2	5	2	
Liver .. .. .	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	
	..	6	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	2	
Esophagus.. .. .	4	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	1	
	..	4	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..	
Pancreas .. .. .	5	..	..	..	..	..	..	..	..	..	..	2	1	..	2	..	..	..	
	..	8	..	..	..	..	..	..	1	1	1	..	1	1	1	1	1	..	
Rectum .. .. .	11	..	..	..	..	..	..	..	..	..	..	1	1	3	3	3	..	..	
	..	5	..	..	..	..	..	..	..	..	..	..	2	..	2	..	1	..	
Stomach .. .. .	27	..	..	..	..	..	..	..	1	..	..	3	2	6	8	5	1	1	
	..	36	..	..	..	..	..	..	..	..	3	4	4	6	9	5	2	3	
TOTAL DIGESTIVE ORGANS	69	..	..	..	..	..	..	..	1	1	..	3	6	9	18	14	12	3	
	..	87	..	..	..	..	..	..	2	1	5	7	10	15	16	14	9	7	

DEATHS FROM CANCER, 1937.—*continued.*

Age and Sex Distribution, and Localization of Disease.

Lesion	Sex		AGE																		
			0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwds	
	M.	F.																			
RESPIRATORY ORGANS	3	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	
Bronchus .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Larynx .. ..	6	..	..	..	..	..	..	..	..	1	..	..	..	1	..	4	..	..	..	..	
.. ..	..	5	..	..	..	..	..	..	..	..	..	..	1	1	1	1	..	1	..	..	
Lungs .. ..	3	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	
.. ..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	
Mediastinum .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
.. ..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	
TOTAL RESPIRATORY ORGANS	12	..	..	..	..	..	..	..	1	1	1	1	2	2	..	4	..	..	..	..	
.. ..	..	8	..	..	..	..	..	..	..	..	..	..	1	1	1	2	2	1	..	..	
MALE GENITAL ORGANS	..	20	..	..	..	..	..	..	..	..	3	..	5	4	3	4	..	1	..	..	
Testis .. ..	..	8	..	..	..	..	..	..	..	..	..	2	2	2	1	..	1	..	..	..	
Ovary .. ..	..	8	..	..	..	..	..	..	..	..	..	2	2	2	1	..	1	..	..	..	
TOTAL FEMALE GENITAL ORGANS	..	28	..	..	..	..	..	..	..	..	3	2	7	6	4	4	1	1	..	..	
.. ..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	
.. ..	..	37	..	..	..	..	..	..	..	3	2	5	6	2	9	6	2	2	..	..	
MALE GENITO-URINARY ORGANS	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Bladder .. ..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	
Kidney .. ..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
Prostate .. ..	3	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	
TOTAL MALE GENITO-URINARY ORGANS	5	..	..	..	..	..	..	..	..	..	..	1	..	2	1	1	..	..	..	..	
.. ..	5	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1	2	..	..	..	
.. ..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	
OTHER OR UNSPECIFIED ORGANS	6	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	2	..	1	..	
.. ..	..	11	..	..	..	..	..	1	..	..	..	1	2	2	1	1	2	1	..	..	
TOTAL MALES	115	..	..	..	..	..	1	..	3	2	2	5	8	14	25	26	22	4	3	..	
TOTAL FEMALES	..	175	..	..	..	..	..	1	..	6	6	13	23	21	31	30	21	15	7	1	
TOTAL BOTH SEXES	..	290	..	..	..	..	1	1	3	8	8	18	31	35	56	56	43	19	10	1	

## DIABETES.

The local authority makes no special provision for the treatment of diabetes. The physician to the Bolton Royal Infirmary has special clinics for the supervision of the treatment of patients at the hospital.

Since the 16th of September, 1924, the Bolton Public Health Department has supplied insulin free to uninsured patients suffering from diabetes where the income of such patients made it impossible for them to purchase the drug. This has proved a great boon to many sufferers. During 1937, 2,197 bottles of insulin each containing 100 units, and 194 bottles each containing 200 units were supplied free, and 1,553 bottles of 100 units and 495 bottles of 200 units were supplied at a cheap rate.

## PREVENTION OF BLINDNESS.

The main preventable cause of blindness is ophthalmia in the newly born. The Council has made arrangements whereby any medical practitioner dealing with a case of ophthalmia may have the advice and assistance of an ophthalmic specialist. The local authority also pays for any necessary treatment in hospital and for the regular attendance of a district nurse for cases kept at home. The results of prompt and skilled treatment have been very satisfactory.

The number of cases notified during the year was 5, being 2 less than last year.

In no case was there impairment of vision.

Cases not treated in hospital are visited daily by one of the health visitors.

Particulars of the cases notified in 1937 are as follows :—

CASES.			VISION.			Deaths
Notified	Treated		Un- impair'd	Im- paired	Total Blind- ness	
	At Home	In Hospital				
5	4	1	4	—	—	1

## TUBERCULOSIS.

The death-rate from all forms of tuberculosis in Bolton during 1937 was .64. The corresponding rate for England and Wales was .69.

The total number of new cases notified in 1937 was 174 as compared with 158 in 1936. One hundred and seventeen of the new cases were pulmonary tuberculosis and 57 were non-pulmonary tuberculosis.

The death-rate from tuberculosis of all forms during 1937 in certain Lancashire County Boroughs was as follows :—

BOLTON	..	..	.64	Oldham	..	..	.77
Bury	..	..	.65	Wigan	..	..	.81
Rochdale	..	..	.69	Preston	..	..	.85
St. Helens	..	..	.70	Warrington	..	..	.93
Blackburn	..	..	.72	Salford	..	..	1.01
Burnley	..	..	.72	Manchester	..	..	1.03

It is satisfactory to be able to report that Bolton has the lowest death-rate from tuberculosis amongst the Lancashire manufacturing towns.

### NON-PULMONARY TUBERCULOSIS NOTIFICATIONS.

Ages	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards	TOTAL
Males ..	—	8	5		4	3	3	1	—	1		25
Females ..	—	5	4	2	5	3	7	4	2	—		32

### DEATHS FROM TUBERCULOSIS.

One hundred and ten Bolton residents were certified as having died of tuberculosis during 1937. This compares with 119 in 1936.

Fifty-eight of these deaths took place in institutions as follows : —

- 12 died in the Bolton Borough Hospital.
- 27 died in Townleys Hospital.
- 6 died in the Bolton Royal Infirmary.
- 8 died in Wilkinson Sanatorium.
- 2 died in Haslam Nursing Home.
- 1 died in Blair Hospital.
- 1 died in County Mental Hospital, Withington.
- 1 died in the County Mental Hospital, Whittingham.

The age and sex distribution of those who died of tuberculosis are given in these tables :—

PULMONARY TUBERCULOSIS DEATHS.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males .. ..	65	—	—	—	4	21	10	10	17	3
Females .. ..	27	—	—	1	3	11	6	4	2	—
Total .. ..	92	—	—	1	7	32	16	14	19	3

ANNUAL DEATH-RATE FROM TUBERCULOSIS (ALL FORMS).

BOLTON AND ENGLAND AND WALES, 1926-1937.

Year	Rate per 1,000 living	
	Bolton	England and Wales
1926	·92	·96
1927	1·02	·97
1928	·77	·93
1929	·79	·96
1930	·82	·89
1931	·77	·89
1932	·75	·83
1933	·64	·82
1934	·63	·76
1935	·55	·71
1936	·68	·69
1937	·64	·69

For the past ten years the Bolton tuberculosis death-rate has been lower than that for England and Wales.

Age and sex distribution of cases of tuberculosis notified in Bolton in 1937.

PULMONARY TUBERCULOSIS NOTIFICATIONS.

Ages	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards	Total
Males ..	—	—	—	—	5	4	13	12	18	16	2	70
Females ..	—	—	—	1	11	9	9	9	5	2	1	47

NON-PULMONARY TUBERCULOSIS DEATHS.

Sex.	Total	AGES.								
		Under 5	5 to 10	10 to 15	15 to 20	20 to 35	35 to 45	45 to 55	55 to 65	65 and upwards
Males ..	12	4	1	1	1	3	1	1	—	—
Females ..	6	2	—	—	2	1	—	—	—	1
Total ..	18	6	1	1	3	4	1	1	—	1

In 12 cases the disease had not been notified during life. Eight of these cases died in institutions, and the diagnosis was made after death.

Action Under Legal Enactments.

No action was necessary during the year under the Public Health (Prevention of Tuberculosis) Regulations, 1925, relating to tuberculous employees in the milk trade, nor was Section 62 of the Public Health Act, 1925, nor Section 172 of the Public Health Act, 1936, employed to remove any patient compulsorily to a sanatorium.

TUBERCULOSIS DISPENSARY.

The work of the Dispensary continues as in previous years. It acts as a clearing-house for all forms of tuberculosis. Cases are referred here by the practitioners of the town. The Tuberculosis Officer examines the patients and advises the general practitioner as to diagnosis and future treatment—whether it should be provided in a sanatorium, at home by the family doctor, or through the medium of the Dispensary.



The Dispensary is open every week-day (except Saturday) from 9 a.m. to 12 noon and on Monday and Friday from 2 p.m. to 5 p.m. The work done at the dispensary is shown by the following figures :—

Total attendances .. .. .	2,135
Total number of patients sent for consultation ..	306
The results of these consultations were as follows :—	
Number found to have pulmonary tuberculosis ..	79
Number found to have non-pulmonary tuberculosis	41
Number of cases kept under observation for suspected pulmonary tuberculosis .. .. .	5
Number of cases kept under observation for suspected non-pulmonary tuberculosis .. .. .	—
Number in whom no evidence of tuberculosis was found .. .. .	181
Visits by Tuberculosis Nurse .. .. .	1,327
Number of specimens of sputum examined .. ..	223
Total number of cases on the dispensary register :—	
Pulmonary tuberculosis .. .. .	321
Non-pulmonary tuberculosis .. .. .	141
Total ..	462
X-ray examinations made in connection with dispensary work .. .. .	
	175
Total number of cases on the notification register :—	
Pulmonary tuberculosis .. .. .	374
Non-pulmonary tuberculosis .. .. .	177
Total ..	551

#### TREATMENT OF TUBERCULOSIS.

In Bolton, institutional treatment for tuberculosis is given very promptly to all patients desiring it and who are deemed suitable cases for such treatment. It is rare for a patient to wait more than a week.

Three hundred and six persons applied for treatment in 1937. Two hundred and forty-one of these were cases of pulmonary tuberculosis and 56 of non-pulmonary tuberculosis. Nine cases were admitted to hospital for observation.



The treatment given was as follows :—

Residential treatment	..	..	131
Domiciliary treatment	..	..	140
Out-patient treatment	..	..	32
Declined residential treatment	..		1
On waiting list at close of 1937	..		1
Application withdrawn	..	..	—
Application cancelled	..	..	1

No patient requiring residential treatment was refused such treatment.

#### PULMONARY.

Pulmonary cases requiring institutional treatment are provided for as follows :—

30 beds (and more if needed) at the Wilkinson Sanatorium.

24 beds at the Borough Hospital.

In addition, many cases enter Townley's Hospital, or are first diagnosed while in-patients there, and some degree of co-ordination is obtained by visits of the Tuberculosis Officer to these cases, and the transference of those suitable to sanatorium.

During the year 1936, two cases of pulmonary tuberculosis in children were sent to the Eastby Sanatorium, near Skipton, where, in addition to sanatorium life, they are enabled to receive education, the School being recognised by the Board of Education. These cases are still in residence there, showing steady improvement.

#### NON-PULMONARY.

Cases of non-pulmonary tuberculosis in children requiring institutional treatment are sent to the Royal Liverpool Children's Hospital at Heswall, Cheshire, where we have a call on six beds.

Adult cases of non-pulmonary tuberculosis are sent to the Robert Jones & Agnes Hunt Orthopaedic Hospital, Oswestry, and to various other hospitals according to the nature of the disease.

The Bolton Public Health Committee pays for the treatment of all these cases that are sent through the Department, and in many cases the fares of those not transferred by ambulance also. Occasionally, in necessitous cases, the fares are paid for a relative to visit the patient.

Many of these cases are diagnosed at Bolton Royal Infirmary and Townleys Hospital, and subsequently transferred to these other hospitals with the approval of the Tuberculosis Officer.

The following table summarizes the residential treatment given during 1937.

ACCOMMODATION PROVIDED BY LOCAL AUTHORITY WITH NUMBER OF PERSONS ADMITTED FOR TREATMENT DURING THE YEAR 1937.

INSTITUTION.	Beds	Admitted during the year			Under Treatment 31st Dec. 1937.
		Total	Insured	Uninsu'd	
Wilkinson Sanatorium .. ..	30	65	60	5	28
Borough Hospital .. ..	24	42	32	10	2
*Heswall .. ..	6	7	..	7	10
*Bolton Royal Infirmary .. ..	..	8	3	5	..
*Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry .. ..	..	6	3	3	4
*Eastby Sanatorium, Nr. Skipton .. ..	..	..	..	..	2
*Wrightington Hospital, Nr. Wigan .. ..	..	1	1	..	..
*Manchester Royal Infirmary .. ..	..	2	2	..	1

\* Paid for per user.

### Manchester and Salford Hospital for Skin Diseases.

Six patients suffering from tuberculosis of the skin were referred for advice and treatment to the Manchester and Salford Hospital for Skin Diseases. The total number of attendances made by the out-patients was 50.

Several cases of tuberculosis of the skin have been referred to the newly opened Skin Department of the Bolton Royal Infirmary, where Dr. Somerford of Manchester attends.

During the year, 25 cases were referred to the Bolton Royal Infirmary for ultra-violet ray treatment, the majority of these cases being of gland tuberculosis. An average of 40 treatments was given to each case.

### Artificial Pneumothorax.

The number of attendances for this form of treatment has again increased this year. Twenty patients attended the Dispensary at intervals varying from 2—4 weeks, and a second afternoon session has been devoted to the work during the year. Only a small percentage of patients are suitable for the treatment, as it depends on the resting of

the diseased lung by collapsing it, and is therefore only applicable to patients with the other lung healthy, but the results again encourage its use wherever possible.

Much attention has been paid of recent years to the surgical treatment of chest conditions, and many surprising results achieved by operations closely related to artificial pneumothorax. It was felt, therefore that those methods of treatment now firmly established as of value should not be withheld from any suitable case : a start was accordingly made, and several cases have been seen and operated upon by a surgeon specialising in chest surgery. It is hoped to continue and expand this work.

### Examination of Contacts.

By the systematic examination of house contacts of known, particularly infectious, cases, many early or unsuspected cases of tuberculosis are detected. Although new methods of treatment are continually being devised, it still remains true that the most important function of the Dispensary is to diagnose cases in the early stages, when complete cure can be attained.

During the year, 70 contacts were examined at the Dispensary or in the home ; of these, 8 proved to be tuberculous. It is felt that by an extension of this work the aim and duty of the Dispensary will be more fully discharged.

### Care Work.

The Dispensary undertakes a considerable amount of care work. A pint of milk is issued daily to necessitous patients, and malt and oil where necessary.

#### ASSISTANCE GIVEN TO NECESSITOUS TUBERCULOUS PATIENTS.

- |  |              |
|--|--------------|
| 1. Total number of patients assisted .. .. | 145          |
| 2. Average time receiving assistance ..    | 6 months     |
| 3. Amount of milk given .. ..              | 25,116 pints |
| 4. Malt and oil given .. ..                | 116 lbs.     |

Recommendations are frequently given to the Public Assistance Department and the Unemployment Assistance Board for extra assistance as regards food, etc., and also to the Guild of Help and the British Legion as regards clothing, and this co-operation with other organisations assists the patients to maintain their health.

A considerable number of patients living in insanitary property or overcrowded conditions have, on representations to the Housing Committee, been promptly rehoused in Corporation Housing Schemes or otherwise.

This helpful co-ordination is greatly appreciated as being one of the most practical ways of permanently improving the well-being of these patients.

### VENEREAL DISEASES.

During 1937 the venereal diseases clinics were very busy.

The nature of the work done by these clinics is of immense importance to the patients and to the community at large.

These clinics are conducted so as to attract the attention of the general public as little as possible.

The times and place where the clinics are held are announced by public notices in many places in the town.

The times at which the clinics meet are as follows :—

Monday ..	..	11-0 a.m. and 6-30 p.m.	} Males.
Wednesday ..	..	11-0 a.m. and 6-30 p.m.	
Friday ..	..	11-0 a.m. and 6-30 p.m.	
Tuesday ..	..	.. .. 9-30 a.m.	} Females.
Thursday..	..	.. .. 6-0 p.m.	
Saturday ..	..	.. .. 10-0 a.m.	

Patients who are unable to attend the evening clinics can receive treatment during the day by arrangement. Every case which calls for the first time at the Public Health Office receives whatever treatment may be necessary the same day.

Irrigation of cases of gonorrhœa is carried out at the following times :—

#### FOR MALES.

Monday ..	..	.. .. 11-0 a.m. and 6-30 p.m.
Tuesday ..	..	.. .. 7-0 p.m.
Wednesday ..	..	.. .. 11-0 a.m. and 6-30 p.m.
Thursday..	..	.. .. 11-0 a.m.
Friday ..	..	.. .. 11-0 a.m. and 6-30 p.m.

#### FOR FEMALES.

Monday ..	..	.. .. 2-30 p.m.
Tuesday ..	..	.. .. 11-0 a.m.
Wednesday ..	..	.. .. 2-30 p.m.
Friday ..	..	.. .. 2-30 p.m.

# Statistics of Number of Patients and Number of Attendances at the Venereal Diseases Clinics in 1937.

The number of patients who attended the clinics in 1937 was :—

Men	..	805	Women	..	441
-----	----	-----	-------	----	-----

The diseases from which they suffered were :—

			Men	Women	Total
Syphilis	..	..	204	208	412
Soft Chancre	..	..	—	—	—
Gonorrhœa	..	..	434	126	560
Non-venereal	..	..	167	107	274
			805	441	1,246

The above figures give the total number of patients who attended the clinics during 1937. The numbers of new patients who came under treatment for the first time in 1937 were as follows :—

			Men	Women
Syphilis	..	..	22	33
Soft Chancre	..	..	—	—
Gonorrhœa	..	..	201	42
Non-venereal	..	..	146	91
			369	166

## Attendances.

The total number of attendances made by patients at the clinics was :—

Men	..	10,563	Women	..	6,211
-----	----	--------	-------	----	-------

The following specimens were sent from the clinics to the Public Health Laboratory, Manchester, for examination :—

Wassermann Reaction—Blood	..	..	791
Gonorrhœa—Microscopical tests	..	..	3
Complement fixation test	..	..	263

Patients received 2,162 intravenous injections of Salvarsan substitutes, 3,295 intramuscular injections of bismuth, and 94 mercury injections.

The following table shows the attendances and treatment received by Bolton patients at Treatment Centres in other towns.

	Treatment Centre				
	Man- chester	Bury	Salford	Liverpool	South Shields
No. of cases dealt with for the first time during 1937 :—	7	2	15	1	1
(a) Syphilis .. ..	—	—	—	—	—
(b) Soft Chancre .. ..	—	—	—	—	—
(c) Gonorrhœa .. ..	3	—	6	1	1
(d) Conditions other than Venereal .. ..	4	2	9	—	—
Attendances of all patients..	363	41	995	51	8
Doses of Salvarsan Substitutes given .. ..	48	—	—	—	—
Tests :—					
Wassermann .. ..	36	—	—	—	—
Gonorrhœa .. ..	—	—	—	—	—
In-patient days .. ..	—	—	2	—	—

The tables on pages 109 and 110 show the work carried out at the Bolton Treatment Centre.

Eight medical men applied during 1937 for arsenobenzene compounds, and 190 doses were supplied to them for use in their private practices.

The following examinations were carried out at the Public Health Laboratory, Manchester, for private medical practitioners or Institutions.

Wassermann Reaction —Blood ..	353
—C. S. Fluid	39
Kahn Test .. ..	6
Gonorrhœa—Microscopical tests ..	33
Complement fixation tests	1

RETURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT BOLTON PUBLIC HEALTH OFFICES DURING THE YEAR ENDED THE 31ST DECEMBER, 1937.

[illegible]



	Syphilis		Soft Chancres		Gonorrhoea		Conditions other than Venereal		TOTALS	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
11. Number of attendances :—										
(a) for individual attention of the medical officers	2913	3031	..	..	4279	1840	247	154	7439	5025
(b) for intermediate treatment, e.g., irrigation, dressing.. .. .	54	58	..	..	2653	900	417	228	3124	1186
TOTAL ATTENDANCES .. .. .	2967	3089	..	..	6932	2740	664	382	10563	6211
12. In-patients :—										
(a) Total number of persons admitted for treat- ment during the year .. .. .	..	..	..	..	..	..	..	..	..	..
(b) Aggregate number of "in-patient days" of treatment given .. .. .	..	..	..	..	..	..	..	..	..	..
13. Number of cases of congenital syphilis in Item 3 above classified according to age periods :—	Under 1 year		1 & under 5 years		5 and under 15 years		15 years and over		TOTALS	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
	..	1	..	1	..	2	1	4	1	..
14. (a) Names of chief preparations used in the treat- ment of Syphilis .. .. .	Arsenical				Mercury		Bismutal			
	Approved Arsenobenzene Compounds		Others							
(b) Total number of injections given (out- patients and in-patients) .. .. .	Stabilarsan, Sulfarsenol, Sulphostab.		Tryparsa- mide.		Colloidal Mercury Sulphide		Bismosta			
	2137		25		94		3295			
15. PATHOLOGICAL WORK :—	Microscopical		Cultural		Serum		Cerebro- spinal fluid		Other or diagno of Vene Dis	
	for Syphilis	for Gonorrhoea	for Gonorrhoea	for Syphilis	for Gonorrhoea					
(a) Number of specimens examined at, and by the medical officer of, the Treatment Centre .. .. .	..	978	..	..	..	..	..	..	..	..
(b) Number of specimens from patients attending at the Treatment Centre sent for examination to an approved laboratory .. .. .	..	3	..	† 791	263	..	..	..	..	..

STATEMENT SHOWING THE SERVICES RENDERED AT THE TREATMENT CENTRE DURING THE YEAR, CLASSIFIED ACCORDING TO THE AREAS IN WHICH THE PATIENTS RESIDED.

†Name of County or County Borough (or Country in the case of persons residing elsewhere than in England and Wales) to be inserted in these headings.	Bolton	Lancs. C.C.	Liverpool	Manches- ter	Blackburn	Blackpool	Bury	Wigan	Southport	Tot
A. Number of cases from each area included under the following headings in Item 3 :—										
Syphilis .. .. .	43	11	..	..	..	..	1	..	..	5
Soft Chancres .. .. .	..	..	..	..	..	..	..	..	..	..
Gonorrhoea .. .. .	149	86	..	..	2	1	2	2	1	24
Conditions other than Venereal .. .. .	169	66	1	1	..	..	..	..	..	23
TOTAL .. .. .	361	163	1	1	2	1	3	2	1	53
B. Total number of attendances of all patients residing in each area .. .. .	11681	4799	1	29	104	2	73	72	13	1677
C. Aggregate number of "in-patient days" of all patients residing in each area .. .. .	..	..	..	..	..	..	..	..	..	..

\* This figure includes 56 attendances at the Ante-Natal Centre for the purpose of taking Wassermanns.

† This figure includes 28 Wassermanns taken at the Ante-Natal Centre.



SECTION VII.

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Annual Report of the  
Public Analyst.



**Annual Report of the Public Analyst and Bacteriologist**  
**for the year ended December 31st, 1937.**

The following is the report on the work carried out in the Borough Laboratory during 1937.

SUMMARY.	Number of Samples.
Food and Drugs .. .. .	577
Bacteriological Examinations for the Public Health Committee .. .. .	1,483
Bacteriological Examinations of Milk.. .. .	168
Analyses for the Waterworks Committee .. .. .	693
Analyses for the Gas Committee .. .. .	288
Fertilizers and Feeding Stuffs .. .. .	6
Examinations for the Public Assistance Committee..	49
Examinations for the Streets Committee .. .. .	3
Examinations for the Watch Committee .. .. .	6
Examinations for the Electricity Committee .. .. .	4
Examinations for the Royal Infirmary .. .. .	5
Miscellaneous Examinations for the Public Health Committee .. .. .	106
	<u>3,388</u>

**FOOD AND DRUGS.** **PUBLIC HEALTH COMMITTEE.**

	Total	Genuine	Adulterated	Per cent Adulterated
Milk .. .. .	291	274	17	5·84
Condensed Milk .. .. .	2	2	..	..
Bottled and Tinned Cream	2	2	..	..
Butter .. .. .	36	36	..	..
Margarine .. .. .	9	9	..	..
Cheese .. .. .	2	2	..	..
Lard .. .. .	24	24	..	..
Tea .. .. .	8	8	..	..
Coffee and Mixtures .. .. .	29	29	..	..
Cocoa .. .. .	4	4	..	..
Sugar .. .. .	1	1	..	..
Baking Powder .. .. .	7	6	1	14·29
Meat and Fish Products .. .. .	16	16	..	..
Cooking Fats .. .. .	4	4	..	..
Cereals .. .. .	50	50	..	..
Condiments and Spices .. .. .	34	30	4	11·76
Sweets .. .. .	2	2	..	..
Beverages .. .. .	1	1	..	..
Drugs .. .. .	32	24	8	25·00
Lemon Cheese .. .. .	2	2	..	..
Miscellaneous .. .. .	21	21	..	..
	<u>577</u>	<u>547</u>	<u>30</u>	<u>5·20</u>

MILK.

Total examined  
291

Genuine  
274

Adulterated  
17

All the samples were examined for preservatives and colouring matter. These were absent in every case.

The satisfactory quality has been maintained, the average being (exclusive of skimmed milk) for the year :—

Milk fat  
3·71%

Non-fatty solids  
8·82%

Water  
87·47%

Minimum limits :—Milk fat, 3·00% ; Non-fatty solids, 8·50%.

The following table shows the monthly variation :—

Month	No. of samples			Milk fat	Non-fatty solids
January	..	..	22	3·31	8·67
February	..	..	27	3·94	8·79
March	..	..	24	3·65	8·77
April	..	..	30	3·50	8·79
May	..	..	24	3·72	8·95
June	..	..	27	3·46	8·62
July	..	..	33	3·66	8·84
August	..	..	18	3·85	8·86
September	..	..	17	3·87	9·00
October	..	..	12	4·42	8·93
November	..	..	39	3·91	8·85
December	..	..	18	3·61	8·87

BUTTER.

Thirty-six samples have been examined. All were genuine and of good quality. In no case was the maximum legal limit for water (16%) exceeded, and in no case was preservative found.

CONDENSED MILK.

Two samples have been examined. These were of satisfactory quality, and contents agreed with declarations on labels.

BOTTLED AND TINNED CREAM.

Two samples have been examined. The average fat content was 20·88%. Fresh cream contains as a rule about 50% fat, and its superiority over the tinned variety is therefore obvious.

The samples examined were free from preservatives and thickening agents.

#### MARGARINE.

Nine samples have been examined. All were sweet and wholesome whether of vegetable or animal origin. All were examined for preservatives but in no case was any found.

#### CHEESE.

Two samples have been examined. These were whole meat of satisfactory quality. Average milk fat on dried sample—53.75%.

#### COFFEE AND COFFEE MIXTURES.

Twenty-nine samples have been examined.

#### MEAT AND FISH PRODUCTS.

Sixteen samples have been examined with special regard to preservatives. Where no declaration was made, these were proved to be absent in every case.

#### COOKING FATS.

Four samples have been examined. One of these consisted of a mixture of beef fat and hydrogenated cotton-seed oil in the proportions of 45% and 55% respectively, the others consisted wholly of hydrogenated oils. The samples were sweet and wholesome and were satisfactory substitutes for lard.

#### LARD.

Twenty-four samples have been examined. These were derived wholly from the fat of the hog.

#### SWEETS.

Two samples have been examined. These were specially examined for arsenic and deleterious ingredients. In no case did the arsenic exceed 1/200th of a grain per pound, and in no case was any injurious substance detected.

#### CONDIMENTS AND SPICES.

Thirty-four samples have been examined. One sample of vinegar was deficient in acetic acid to the extent of 35%. Three others (2 informal), bought as "Table Vinegar" were artificial vinegars.

#### DRUGS.

Thirty-two samples have been examined. Of these, the following were adulterated :—

- 3 Camphorated oils, 23.3%, 6.7%, 11.05% deficient in camphor.
- 2 Tinctures of iodine, 8% and 12% excess potassium iodide.
- 1 Glycerine of borax, 8.5% deficient in borax.
- 1 Grey powder tablets, 21.2% deficient in grey powder.
- 1 Ammoniated tincture of quinine, 21% deficient in ammonia.

SUGAR.

One sample was examined. This was of excellent quality.

BAKING POWDER.

Seven samples have been examined. One of these was deficient in available carbon di-oxide to the extent of 37·8%.

MISCELLANEOUS.

Twenty-one samples have been examined.

PRESERVATIVES.

All samples were examined for preservatives where such might reasonably be expected to be present.

	No. examined	No. containing Preservatives
Milk .. .. .	291	..
Condiments and Spices	34	..
Meat and Fish Products	16	3 (Declared)

These were 3 samples of sausages containing 16·5, 137 and 71 parts of sulphur di-oxide per million.

COLOURING MATTER.

	No. examined	No. containing colouring matter
Milk .. .. .	291	..

BACTERIOLOGICAL EXAMINATIONS.

(Public Health Department).

	Total.	Positive.	Negative.	Doubtful.
Tuberculosis .. ..	536	156	380	..
Diphtheria .. ..	944	136	788	20
Fever B. typhosus ..	3	..	3	..
Paratyphoid A.	3	..	3	..
Paratyphoid B.	3	1	2	..

BACTERIOLOGICAL EXAMINATION OF MILK.

PASTEURIZED MILK.

Ministry of Health Standard :—

The milk must not contain more than 100,000 bacteria per millilitre.

No. of samples examined .. ..	12
Average agar count per 1 ml. .. ..	6,340

TUBERCULIN TESTED MILK.

Ministry of Health Standard :—

The milk must not decolourise methylene blue within  $4\frac{1}{2}$  hours if the sample is taken at any time from 1st May to 31st October ; or within  $5\frac{1}{2}$  hours if the sample is taken at any time from 1st November to 30th April.

The milk also must not contain coliform bacillus in 1/100 millilitre.

No. of samples examined	.. .. .	23
„ „ which satisfied methylene blue test	.. .. .	23
„ „ containing B. coli in 1/100 ml.	.. .. .	0

ACCREDITED MILK.

Ministry of Health Standard :—

The milk must not decolourise methylene blue within  $4\frac{1}{2}$  hours if the sample is taken at any time from 1st May to 31st October ; or within  $5\frac{1}{2}$  hours if the sample is taken at any time from 1st November to 30th April.

The milk also must not contain coliform bacillus in 1/100 millilitre.

No. of samples examined	.. .. .	132
„ „ which satisfied methylene blue test	.. .. .	127
„ „ containing B. coli in 1/100 ml.	.. .. .	3

The 5 samples which did not satisfy the methylene blue test decolourised the methylene blue in 4, 2,  $3\frac{1}{2}$ , 5 and 4 hours respectively.

VENDED MILK. (Bottled.)

No Ministry of Health Standard of Purity.

No. of samples examined	.. .. .	1
„ „ satisfying methylene blue test	.. .. .	1
„ „ containing B. coli in 1/100 ml.	.. .. .	0

MISCELLANEOUS EXAMINATIONS.

- 6 Fertilizers and Feeding Stuffs.
- 11 Urines.
- 8 Waters.
- 6 Pathogenic specimens other than those previously tabulated.
- 3 Coals.
- 7 Deposits.
- 1 Human Milk.
- 12 Kit Washings.
- 1 Honey.
- 1 Mussels.
- 1 Currant Cake.
- 55 Bath Waters.

BATH WATERS. (Monthly Examinations).

AVERAGE AGAR COUNTS AND B. COLI CONTENTS.

	High Street	Moss Street	Bridgeman Street	Bolton School
Agar Count } per 1 ml. }	Ladies	Gents	Ladies	Gents
	161 ..	13 9 ..	338 566 ..	204

B. COLI.

	High Street	Moss Street	Bridgeman Street	Bolton School
	Ladies	Gents	Ladies	Gents
- in 10 ml. ..	71.42	100.00	72.73	80.00
+ in 10-in 5 ml. ..	0	0	9.09	10.00
+ in 5-in 2 ml. ..	0	0	9.09	0
+ in 2-in 1 ml. ..	0	0	9.09	10.00
+ in 1-in ½ ml. ..	14.29	0	0	0
+ in ½-in 1/10ml. ..	0	0	0	0
+ in 1/10-in 1/100ml. ..	0	0	0	0
+ in 1/100 ml. ..	14.29	0	0	0

The pH value and free chlorine content have also been determined. With the exception of a few instances these figures have fallen within the accepted limits.

FERTILIZERS AND FEEDING STUFFS.

Six samples have been examined. Three feeding meals did not agree with warranty. These were :—

1. 16.4% deficient in oil.
2. 30% deficient in oil.  
38% deficient in salt.
3. 13.6% excess phosphoric acid.  
15.0% excess albuminoids.

WATERWORKS COMMITTEE.

The water comprising the town's supply is examined bacteriologically weekly, and chemically monthly. The water being of an acid nature before treatment, a careful watch is kept on reaction and plumbosolvency.

The quality of the water during 1937 has been excellent as a domestic supply. For details of the water examination see page 41.

Routine water examinations	690
Samples of grease .. ..	2
Solder .. .. .	1

GAS COMMITTEE.

The gas has been examined regularly for total sulphur, ammonia, and sulphuretted hydrogen.



WATCH COMMITTEE.

- 1 Medicine.
- 1 Coat for stains.
- 1 Milk.
- 1 Cauliflower.
- 1 Mutton.
- 1 Butter.

STREETS COMMITTEE.

- 2 Lubricating oils.
- 1 Brick.

PUBLIC ASSISTANCE COMMITTEE.

- 41 Milks.
- 8 Margarines.

The average composition of the above milks was :—

Milk fat	..	..	..	3·80%
Non-fatty solids	..	..	..	8·81%
Water	..	..	..	87·39%

The margarines satisfied the Committee's requirements.

ROYAL INFIRMARY.

- 5 Milks for chemical and bacteriological examination.

ELECTRICITY COMMITTEE.

- 4 Tin-lead alloys.

Sale of Food and Drugs Acts.

ADMINISTRATIVE RETURN OF ACTION TAKEN WITH REGARD TO  
SAMPLES NOT REPORTED TO BE GENUINE.

Article.	Result of Analysis.	Action taken.
Milk .. .. .	18·7% deficient in fat	No action as a result of appeal to cow.
Milk .. .. .	11·67% " " "	No action. Reasonable explanation given by vendor.
Milk .. .. .	10· 7% " " "	No action. Appeal to cow sample.
Milk .. .. .	10· 0% " " "	No action as a result of appeal to cow.
Milk .. .. .	10· 0% " " "	No action. Appeal to cow sample.
Milk .. .. .	5· 7% " " "	Fined £2 and 10/6 costs.
Milk .. .. .	5· 0% " " "	No action. Appeal to cow sample.
Milk .. .. .	3· 3% " " "	No action.
Milk .. .. .	1· 3% " " "	No action.
Milk .. .. .	28· 2% added water	Fined £15 } and 10/6
Milk .. .. .	27· 8% " " "	Fined £15 } costs.
Milk .. .. .	19· 9% " " "	Proceedings taken against dairyman.
Milk .. .. .	2·35% " " "	No action.
Milk .. .. .	2·24% " " "	No action.
Milk .. .. .	1·05% " " "	No action.
Milk .. .. .	24· 0% deficient in fat and 4·36% added water.	Fined 20/- and 10/6 costs.
Milk .. .. .	4· 0% deficient in fat and 4·5% added water.	No action as a result of appeal to cow.
Table Vinegar ..	100% unfermented .. .. .	Informal sample.
Table Vinegar ..	100% artificial vinegar .. .. .	Informal sample.
Table Vinegar ..	This sample consists entirely of artificial vinegar, i.e., dilute acetic acid coloured with caramel.	Fined 20/- and 10/6 costs.
Vinegar .. .. .	35· 0% deficient in acetic acid ..	Fined 20/- and 10/6 costs.
Tincture of iodine ..	12· 0% excess of potassium iodide	Warning given.
Tincture of iodine ..	8· 0% " " " " " "	
Camphorated oil ..	23· 3% deficient in camphor " " ..	Fined 20/- and 10/6 costs.
Camphorated oil ..	11·05% " " " "	Fined 10/- and 10/6 costs.
Camphorated oil ..	6· 7% " " " "	Warning given.
Glycerine of borax ..	8· 5% deficient in borax.. ..	Warning given.
Ammoniated tincture of quinine. ..	21· 0% deficient in ammonia ..	Warning given.
Grey powder ..	21· 2% deficient in grey powder	" "
Baking powder ..	37· 8% deficient in available carbon dioxide.	No action.

Offences other than adulteration.—Nil.

SECTION VIII.



**Miscellaneous.**



**Queen's Park Observatory, Bolton.**

**METEOROLOGICAL SUMMARY, 1937.**

Taken over the whole year, the barometer readings were below normal, the year's daily average being 29·839", against the long period average of 29·936". This was largely accounted for by the low monthly averages for January, February, March and December (29·247" against 29·836"). The highest reading for the year was 30·735" (December 27th) and the lowest 28·668" (March 12th).

Temperatures were higher than usual, the mean 48·21° being 1·1° above the long period average. Only March, June, November and December showed average temperatures below normal. The means for January and August were 3° above normal. August 1st was the hottest day (80·2°) and December 18th was the coldest (21·6°).

Rainfall (35·894") was well below the average (42·225"). Only February with more than twice the usual rainfall and April showed falls in excess of normal. The greatest fall was 1·264" on January 5th. There was rain on 209 days and snow on 25 days.

The sun shone a total of 1,028·0 hours, 28 hours above average despite deficiencies of 14 hours in April, 31 hours in June and 41 hours in July. August, November and December were unusually sunny. Sunshine was recorded on 276 days. The most sunshine in one day was 14·5 hours on June 21st.

The daily wind average (88 miles) was only approximately half the long period average. Direction recordings showed an unusual preponderance of easterly winds. The maximum velocity was 33 m.p.h. on January 5th.

Six thunderstorms were recorded during the year.

E. HENDY, F.R.MET.S.

Borough Meteorologist.

# Meteorological Summary, 1937

1937	Barometer	Mean Relative Humidity	Mean of Maximum and Minimum Tempera- ture	Absolute extremes of Temperature				Sunshine			Total Rainfall
				Highest	Date	Lowest	Date	Total Amount	Maximum in one day	Date	
January ..	29.726"	86.4 %	41.52°	55.0°	22	26.5°	15	hours 18.7	hours 3.9	14	3.625"
February ..	29.520	86.4	40.51	52.0	3	28.7	28	46.2	8.4	23	6.951
March ..	29.665	76.3	36.69	53.1	18	24.0	1	69.7	8.8	23	1.942
April ..	29.855	78.4	47.18	62.8	29	32.3	12	92.6	12.8	26	3.759
May ..	30.020	75.4	52.35	74.9	29	36.2	6	152.7	12.3	2,27	2.363
June ..	30.048	74.1	55.13	71.0	11	42.7	3	129.7	14.5	21	2.056
July ..	29.971	79.7	58.13	78.2	3	44.5	8	107.8	13.0	16	2.721
August ..	30.080	74.4	61.05	80.2	1	44.7	16	166.9	12.6	3	3.138
September ..	29.893	74.6	54.95	73.4	27	37.7	12	90.9	8.2	27	1.945
October ..	29.984	80.0	50.99	67.1	1	37.3	20	62.6	6.7	12	2.401
November ..	30.060	79.4	41.79	55.0	3	23.6	14	58.7	7.3	9	2.264
December ..	29.247	88.2	38.30	54.1	24	21.6	18	31.5	5.9	12	2.729
Totals ..	358.069	953.3	578.59					1028.0			35.894
Averages ..	29.839	79.4	48.21					85.7			2.991

Rainfall. Average 1887—1937 = 42.225"

	Mixed Bathing	Swimming Baths				Slipper Baths				Vapour and Needle Baths	Con-tracts	Total Bathers	Corres-ponding period last year	No. using Wash-houses	Corres-ponding period last year
		4d.	3d.	2d.	1d.	8d.	6d.	4d.	2d.	1d.	9d.				
Moss St. Baths and Wash-houses ..	6231	15304	1438	27387	207	1286	6440	3860	..	1328	..	47673	111154	20738	21426
Bridgeman St. Baths ..	7993	15022	1265	25978	495	3231	2813	1905	..	756	305	33931	93694	..	..
High St. Baths.. ..	3215	5674	377	9137	1150	316	1649	977	..	300	18	12283	*35096	..	..
Rothwell St. Baths and Wash-houses ..	..	..	..	..	..	..	1381	1222	4588	98	..	..	7289	44108	43201
Total ..	17439	36000	3080	62502	1852	4833	12283	7964	4588	2482	323	93887	*247233	64846	64627

\* High Street Baths were closed from 11th February, 1937, until 16th August, 1937, for reconditioning.

Turkish Baths. 12 Months ended 31st March, 1938.

	Turkish Baths			Slipper Baths		Foam Baths	Pine Aeration Baths	Medi-cated Baths	Total Bathers	Corres-ponding period last year
	1st Class	2nd Class		1st Class	2nd Class					
Turkish Baths ..	1641	1846		142	158	261	10	198	4312	4229

### Corporation Horses.

#### REPORT ON THE INSPECTION AND TREATMENT OF HORSES BELONGING TO THE CORPORATION.

The following statement shows the total number of Corporation horses on the 31st December, 1937, the Committees to which they belong, and the total visits of inspection for the purpose of treatment of horses for various ailments during the year.

Committee	Number of Horses	Visits of Inspec- tion during 1937
Cleansing and Sewage .. ..	40	88
Streets .. ..	1	4
Gas .. ..	1	2
Parks .. ..	3	15
Waterworks .. ..	1	2
Education .. ..	2	10
Total .. ..	48	121

During the year five horses were submitted for veterinary examination prior to purchase by the Cleansing and Sewage Committee, and one horse was submitted by the Parks Committee.

In addition to the above horses, 20 dairy cattle belonging to the Education Committee at the Lostock Open Air School have received veterinary attendance and medicine during the year.



PHARMACY AND POISONS ACT, 1933.

This Act, which replaces all the existing legislation in relation to the sale, distribution, etc., of poisons and poisonous substances, together with the Poisons List and Rules made by the Secretary of State, came into full operation on the 1st May, 1936.

The Act requires, *inter alia*, the local authority to keep a list of persons who, not being authorised sellers of poisons (pharmaceutical chemists), are entitled to sell poisons included in part II of the Poisons List, and to appoint inspectors to secure compliance, by means of inspection and otherwise, with the provisions of the Act by such persons.

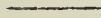
Part II of the Poisons List comprises such commonly used substances as ammonia, carbolic disinfectants, sulphuric and nitric acid, caustic potash, spirits of salt and salts of lemon, arsenical and mercurial substances used as sheep dip and insecticides, etc.

During the year 1936, 179 applications were received from persons desirous of retailing the substances listed in Part II, and the names and addresses of these persons were duly entered in the local authority's list and certificates issued after the prescribed fee of 7/6 had been paid. During the year under review ten certificates were issued to new applicants and 163 persons who paid the prescribed fee of 5/- had their names retained on the list for another year.

Eleven of the sanitary inspectors are inspectors under the Act, and they have made numerous visits for the purpose of giving advice on packing, storage, labelling, bottling, transport and the "breaking" of bulk supplies of poisons. It was found necessary to take legal proceedings in one case where a person was found to be selling ammonia from unregistered premises, and a fine of 5/- was imposed.



SECTION IX.



Appendix.

List No.	CAUSES OF DEATH	Total	SEX		AGE															
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45			
	<b>I. Infectious and Parasitic Diseases</b>																			
1-2	Typhoid and paratyphoid fevers	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
3	Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
4	Relapsing fever ("Spirillum obermeieri")	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
5	Undulant fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
6	Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
7	Measles	4	1	3	..	1	..	..	2	1	..	..	..	..	..	..	..	..	..	
8	Scarlet fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
9	Whooping cough	14	5	9	4	4	3	1	2	..	..	..	..	..	..	..	..	..	..	
10	Diphtheria	23	15	8	..	..	2	3	5	11	1	1	..	..	..	..	..	..	..	
11	Influenza	104	44	60	2	1	..	1	..	1	..	1	2	2	3	8	..	..	..	
12	Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
13	Dysentery	2	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	
14	Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
15	Erysipelas	5	5	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	
16	Acute poliomyelitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
17	Encephalitis lethargica	4	3	1	..	..	..	..	..	..	1	..	1	..	1	..	1	..	..	
18	Cerebro-spinal fever	2	2	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	
19	Glanders	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
20	Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
21	Rabies	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
22	Tetanus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
23-32	Tuberculosis (all forms) :—	110	77	33	1	3	1	1	..	1	2	10	8	13	15	9	..	..	..	
23	Respiratory system	92	65	27	..	..	..	..	..	1	7	6	12	14	8	..	..	..	..	
24	Central nervous system	8	4	4	..	1	..	..	..	1	3	2	1	..	..	..	..	..	..	
25	Intestines and peritoneum	5	5	..	..	1	1	..	..	1	..	..	..	1	1	..	..	..	..	
26	Vertebral column	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
27	Other bones and joints	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
28	Skin and subcutaneous tissues	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
29	Lymphatic system (abdominal and bronchial glands excepted)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
30	Genito-urinary system	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
31	Other organs	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
32	Disseminated tuberculosis	3	2	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	
33	Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
34	Syphilis	3	2	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	
35	Other venereal diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
36	Purulent infection, Septicæmia	4	2	2	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	
37	Yellow fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
38	Malaria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
39	Other diseases due to protozoa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
40	Ankylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
41	Hydatid cysts	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
42	Other diseases due to helminths	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
43	Mycoses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
44	Other infectious or parasitic diseases	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Infectious and Parasitic Diseases	277	159	118	9	10	6	6	10	14	3	13	10	18	19	19	..	..	..	
	<b>II. Cancer and other Tumours</b>																			
45-53	Cancer, malignant disease:—	290	115	175	..	..	..	..	..	..	..	..	1	1	3	8	1	..	..	
45	Buccal cavity and pharynx	19	17	2	..	..	..	..	..	..	..	..	..	..	1	3	..	..	..	
46	Digestive organs and peritoneum	156	69	87	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
47	Respiratory organs	20	12	8	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	
48	Uterus	20	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
49	Other female genital organs	8	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
50	Breast	38	1	37	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	
51	Male genito-urinary organs	5	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
52	Skin	7	5	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
53	Other or unspecified organs	17	6	11	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	
54	Non-malignant tumours	4	2	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	
55	Tumours of undetermined nature	8	4	4	..	..	..	..	..	1	..	1	..	..	1	..	..	..	..	
	Total Cancer and Other Tumours	302	121	181	..	..	..	..	1	1	..	1	1	1	4	8	..	..	..	

									WARD																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br' Hmet	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	3	1	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	1	
..	..	..	..	..	..	..	14	..	..	1	4	1	..	2	..	..	2	1	..	..	..	1	..	1	
12	14	7	17	6	4	1	10	13	1	..	1	1	1	4	1	3	1	4	3	..	1	1	..	1	
..	..	..	..	..	..	..	4	100	2	2	16	5	1	12	7	4	3	7	4	2	5	15	2	3	
..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
2	..	1	..	1	..	..	..	5	..	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	
..	..	1	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	2	..	..	..	..	1	..	1	..	..	1	1	1	..	1	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
12	7	3	1	..	..	..	6	104	3	7	14	12	..	11	6	..	6	6	3	5	10	8	1	12	
12	7	3	..	..	..	..	1	92	3	5	14	11	..	8	5	..	5	5	2	4	9	6	1	8	
..	..	..	..	..	..	..	2	3	..	1	..	1	..	2	..	..	1	..	1	..	1	2	1	2	
..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	3	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	
..	1	..	1	..	..	..	..	3	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	
1	..	..	..	..	..	..	1	3	..	..	1	1	..	..	..	1	..	..	..	..	1	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
27	23	12	19	7	4	1	41	236	6	12	37	22	3	33	14	8	12	23	11	7	17	29	3	29	
35	56	56	43	19	10	1	..	290	5	19	39	22	4	25	8	24	8	31	11	5	17	24	7	20	
19	33	30	26	12	9	1	..	156	1	2	3	..	..	2	1	2	..	4	1	6	11	2	1	..	
3	1	6	2	1	..	..	..	20	2	1	4	1	1	2	1	1	1	..	1	..	..	1	2	2	
2	3	4	..	1	..	..	..	20	..	..	6	1	..	2	1	1	2	..	..	..	3	..	2	..	
2	1	..	..	..	..	..	..	8	..	..	..	..	..	..	1	1	..	1	1	..	1	1	2	1	
2	9	6	2	2	..	..	..	38	..	1	7	4	..	2	1	2	2	3	1	2	2	2	3	3	
2	1	1	..	1	..	..	..	5	..	..	..	..	1	1	..	..	1	1	1	..	2	..	..	..	
2	2	2	2	1	1	..	..	7	..	3	2	2	..	2	..	3	1	1	1	..	..	..	..	1	
..	2	2	4	1	1	..	..	17	..	..	..	..	..	..	..	1	1	..	..	2	2	..	1	1	
..	1	1	1	..	..	..	1	3	1	..	1	..	..	..	..	..	1	2	..	1	..	..	..	..	
35	59	57	44	19	10	1	1	301	6	19	41	22	4	27	8	24	9	34	11	6	18	24	8	21	

List No.	CAUSES OF DEATH	Total	SEX		AGE															
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50		
	<b>III. Rheumatism, Diseases of Nutrition and of Endocrine Glands, and other General Diseases.</b>																			
56	Rheumatic fever .. .. .	23	10	13	..	..	..	..	..	1	2	4	2	..	2	2	1	..	..	
57	Chronic rheumatism, Osteo-arthritides .. .. .	11	4	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
58	Gout .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
59	Diabetes .. .. .	38	12	26	..	..	..	..	..	..	1	..	..	..	1	2	1	..	..	
60	Scurvy .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
61	Beri-beri .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
62	Pellagra .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
63	Rickets .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
64	Osteomalacia .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
65	Diseases of the pituitary gland ..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
66	Diseases of the thyroid and parathyroid glands .. .. .	7	2	5	..	..	1	..	..	..	..	1	..	..	..	..	..	1	..	
67	Diseases of the thymus .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
68	Diseases of the adrenals .. .. .	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
69	Other general diseases .. .. .	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Rheumatism, Diseases of Nutrition and of Endocrine Glands, and Other General Diseases .. .. .	83	29	54	..	..	1	..	..	1	3	5	2	..	3	4	3	..	..	
	<b>IV. Diseases of the Blood and Blood-forming Organs.</b>																			
70	Hæmorrhagic conditions .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
71	Anæmia, chlorosis .. .. .	21	7	14	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	
72	Leukæmia, aleukæmia .. .. .	6	3	3	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	
73	Diseases of the spleen .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
74	Other diseases of the blood and blood-forming organs .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Diseases of the Blood and Blood-forming Organs ..	27	10	17	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	
	<b>V. Chronic Poisoning.</b>																			
75	Alcoholism (acute or chronic) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
76	Chronic poisoning by other organic substances .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
77	Chronic poisoning by mineral substances .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Chronic Poisoning .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	<b>VI. Diseases of the Nervous System and Sense Organs.</b>																			
78	Encephalitis .. .. .	2	1	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	
79	Meningitis .. .. .	11	5	6	2	1	..	..	..	..	1	1	..	1	..	..	..	2	..	
80	Tabes dorsalis (locomotor ataxy) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
81	Other diseases of the spinal cord ..	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
82	Cerebral hæmorrhage, apoplexy, etc. .. .. .	135	55	80	..	1	..	..	..	..	..	..	..	..	..	..	1	2	..	
83	General paralysis of the insane ..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
84	Other forms of insanity .. .. .	3	2	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	
85	Epilepsy .. .. .	5	2	3	..	..	..	..	..	1	..	..	1	..	..	..	..	1	..	
86	Infantile convulsions (age under five years) .. .. .	4	2	2	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
87	Other diseases of the nervous system .. .. .	9	7	2	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	



								WARD																	
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	
3	..	..	..	..	..	..	23	..	1	2	1	..	2	1	2	..	3	1	2	2	4	..	1	1	
2	2	3	4	2	..	..	11	..	1	..	3	..	1	..	1	..	3	1	..	..	..	..	1	..	
3	7	7	5	1	..	..	38	3	1	4	2	..	5	2	5	..	3	2	1	1	4	1	3	1	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
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..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	1	..	..	..	..	1	6	..	1	..	1	..	1	..	..	..	1	..	..	..	..	1	2	..	
..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	
..	..	1	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	
9	9	12	11	7	1	..	1	82	3	4	6	7	..	9	3	8	1	11	4	3	3	9	3	7	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	3	5	6	2	..	1	21	2	..	1	3	1	..	1	5	2	1	2	..	..	1	1	..	1	
..	1	..	1	..	..	..	6	1	..	2	..	..	..	..	1	..	..	..	..	..	1	..	1	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	4	5	7	3	..	1	27	3	..	3	3	1	..	1	6	2	1	2	..	..	2	1	1	1	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
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..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	
..	2	..	..	..	..	3	8	1	..	2	..	..	1	..	1	1	..	..	1	1	1	..	1	1	
1	..	..	1	1	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	
8	26	22	31	17	12	1	134	5	11	18	18	..	7	5	10	5	15	3	4	3	11	3	4	13	
1	1	..	..	..	..	..	2	..	1	..	1	..	..	1	..	..	..	..	..	..	1	..	..	..	
..	1	..	..	1	..	..	5	..	..	2	..	..	..	1	..	..	..	..	1	..	1	..	..	..	
..	..	..	..	..	..	4	..	..	1	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
..	..	4	..	1	..	..	9	..	..	2	2	..	1	..	..	..	..	..	1	..	2	..	1	..	

List No.	CAUSES OF DEATH	Total	SEX		AGE															
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50		
88	Diseases of the eye and annexa ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
89	Diseases of the ear and mastoid sinus .. .. .	5	1	4	..	..	..	..	..	..	1	..	1	..	1	1	..	..	..	
	Total Diseases of the Nervous System and Sense Organs ..	179	77	102	6	2	..	..	1	2	2	2	3	1	1	3	5	4	..	
	<b>VII. Diseases of the Circulatory System.</b>																			
90-95	Heart diseases : .. .. .	520	243	277	..	..	..	..	..	..	..	3	5	6	3	7	12	17	..	
90	Pericarditis .. .. .	3	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
91	Acute endocarditis .. .. .	6	4	2	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	
92	Chronic endocarditis, valvular disease .. .. .	118	48	70	..	..	..	..	..	..	..	..	3	3	1	5	3	10	..	
93	Diseases of the myocardium ..	335	149	186	..	..	..	..	..	..	..	..	1	2	..	2	3	5	..	
94	Diseases of the coronary arteries, Angina pectoris .. .. .	42	30	12	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	
95	Other diseases of the heart ..	16	10	6	..	..	..	..	..	..	..	1	1	1	..	..	3	1	..	
96	Aneurysm .. .. .	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	
97	Arterio-sclerosis .. .. .	133	75	58	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	
98	Gangrene .. .. .	4	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
99	Other diseases of the arteries ..	3	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
100	Diseases of the veins (varix, hæmorrhoids, phlebitis, etc.) ..	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	
101	Diseases of the lymphatic system (lymphangitis, etc.) .. .. .	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
102	Abnormalities of blood pressure ..	28	19	9	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	
103	Other diseases of the circulatory system .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Diseases of the Circulatory System .. .. .	693	344	349	1	..	..	..	..	..	..	3	5	6	3	7	13	2	..	
	<b>VIII. Diseases of the Respiratory System.</b>																			
104	Diseases of nasal fossæ and annexa ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
105	Diseases of the larynx .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
106	Bronchitis .. .. .	86	42	44	2	..	..	1	..	..	..	..	..	2	2	1	2	..	..	
107-109	Pneumonia (all forms) : .. .. .	136	79	57	23	9	8	1	..	1	..	1	3	3	3	6	8	7	..	
107	Broncho-pneumonia .. .. .	68	37	31	21	6	8	1	..	1	..	1	..	1	..	1	3	..	..	
108	Lobar pneumonia .. .. .	52	34	18	1	2	..	..	..	..	..	..	3	2	3	4	5	..	..	
109	Pneumonia (not otherwise defined) .. .. .	16	8	8	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	
110	Pleurisy .. .. .	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
111	Congestion and hæmorrhagic infarct of lung, etc. .. .. .	6	2	4	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	
112	Asthma .. .. .	5	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
113	Pulmonary emphysema .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
114	Other diseases of the respiratory system .. .. .	3	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Diseases of the Respiratory System .. .. .	238	131	107	26	9	8	2	..	1	..	1	3	5	5	8	10	8	..	
	<b>IX. Diseases of the Digestive System.</b>																			
115	Diseases of the buccal cavity, pharynx, etc. .. .. .	2	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	
116	Diseases of the œsophagus .. .. .	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	
117	Ulcer of the stomach or duodenum .. .. .	21	15	6	..	..	..	..	..	..	..	..	..	..	2	1	3	2	..	
118	Other diseases of the stomach ..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
119-120	Diarrhœa and enteritis .. .. .	9	5	4	4	..	1	..	1	..	..	..	..	1	..	..	1	..	..	



									WARD																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br hmet	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
..	1	..	..	..	..	..	..	5	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	1	1
11	31	26	32	20	12	1	9	170	7	13	25	22	..	10	9	11	6	16	4	6	5	18	3	7	17
49	91	76	85	68	41	19	..	520	13	25	73	50	13	39	23	42	13	53	11	14	30	49	13	40	19
1	..	..	1	1	..	..	..	3	..	1	..	1	..	..	1	..	..	..	..	..	..	..	2	1	..
16	19	17	15	8	4	2	..	118	2	5	15	12	2	10	7	10	2	10	3	5	10	11	..	12	2
26	56	50	64	55	35	16	..	335	9	19	50	32	9	25	10	23	9	38	8	8	18	31	11	23	12
5	14	7	2	4	2	..	..	42	1	..	3	4	2	4	1	8	1	3	..	1	2	6	..	3	3
..	2	2	3	..	..	1	..	16	1	..	4	1	..	..	3	1	1	2	..	..	..	..	..	1	2
..	..	1	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	
7	14	23	29	35	15	6	..	133	4	5	19	15	2	21	7	14	5	10	5	1	5	8	4	2	6
..	..	..	2	1	1	..	..	4	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	..	1
..	..	..	..	1	1	..	..	3	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..
1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..
..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
6	11	6	1	2	..	..	..	28	1	2	3	3	2	3	1	2	..	2	1	1	1	1	..	3	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
63	116	106	117	107	58	25	1	692	18	32	95	72	17	65	31	59	18	66	17	16	36	59	17	47	28
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	9	12	10	15	11	7	3	83	4	5	10	8	..	15	2	4	2	10	3	2	5	6	..	7	1
19	9	14	8	6	1	1	41	95	6	14	24	9	4	8	5	13	8	4	12	3	4	10	2	6	3
6	1	5	5	5	..	..	36	32	4	4	14	5	1	7	2	7	3	3	8	..	4	2	3	1	2
7	5	8	2	..	1	1	3	49	2	6	9	3	3	1	3	5	4	1	3	1	..	5	1	4	1
6	3	1	1	1	..	..	2	14	..	4	1	1	..	..	..	1	1	..	1	2	..	3	1	1	..
..	1	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..
1	..	2	..	1	1	..	1	5	..	1	..	1	..	..	..	..	..	1	..	1	1	..	1	..	..
1	3	..	..	..	..	..	..	5	..	..	..	1	..	1	..	..	2	..	..	..	..	1	..	..	..
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..	2	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..
29	24	28	18	22	13	8	45	193	10	20	35	19	4	24	7	17	12	18	15	6	10	18	5	14	4
..	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..
..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
2	2	2	3	..	..	..	..	21	..	..	3	5	..	..	2	2	..	2	2	3	..	2	..	..	..
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..	1	..	..	..	..	..	6	3	1	..	1	2	..	..	1	..	..	..	..	2	..	..	..	..	..

List No.	CAUSES OF DEATH	Total	SEX		AGE													
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	
121	Appendicitis .. .. .	7	4	3	..	..	..	..	..	..	1	..	..	1	1	..	..	
122	Hernia, intestinal obstruction ..	22	9	13	1	..	..	..	..	..	1	..	..	..	1	..	..	
123	Other diseases of the intestines ..	5	3	2	..	..	..	..	..	..	..	..	2	..	..	..	..	
124	Cirrhosis of the liver .. .. .	5	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	
125	Other diseases of the liver .. ..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	
126	Biliary calculi .. .. .	6	1	5	..	..	..	..	..	..	..	..	..	..	..	..	..	
127	Other diseases of the gall bladder and ducts .. .. .	8	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	
128	Diseases of the pancreas .. .. .	2	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	
129	Peritonitis without stated cause ..	5	3	2	..	1	..	..	..	2	1	..	..	..	..	..	1	
	Total Diseases of the Digestive System .. .. .	95	52	43	5	1	1	1	1	2	4	..	2	2	5	1	5	
	<b>X. Non-Venereal Diseases of the Genito-Urinary System and Annexa.</b>																	
130-132	Nephritis :	82	43	39	..	..	..	..	..	..	..	..	2	2	1	3	2	
130	Acute nephritis .. .. .	4	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	
131	Chronic nephritis .. .. .	64	38	26	..	..	..	..	..	..	..	..	2	2	1	3	1	
132	Nephritis, not stated to be acute or chronic .. .. .	14	4	10	..	..	..	..	..	..	..	..	..	..	..	..	1	
133	Other diseases of the kidney and annexa .. .. .	2	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	
134	Calculi of the urinary passages ..	4	2	2	..	..	..	..	..	..	..	..	..	..	..	..	1	
135	Diseases of the bladder .. .. .	5	3	2	..	..	..	..	..	..	..	..	..	..	1	..	..	
136	Diseases of the urethra, urinary abscess, etc. .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
137	Diseases of the prostate .. .. .	18	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
138	Diseases of the male genital organs .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
139	Diseases of the female genital organs .. .. .	4	..	4	..	..	..	..	..	..	..	..	..	1	..	..	1	
	Total Non-Venereal Diseases of the Genito-Urinary System and Annexa .. .. .	115	67	48	..	..	..	..	..	..	..	..	2	3	2	4	4	
	<b>XI. Diseases of Pregnancy, Child- birth and the Puerperal State.</b>																	
140	Post-abortive sepsis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
141	Abortion not returned as septic ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
142	Ectopic gestation .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
143	Other accidents of pregnancy ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
144	Puerperal hæmorrhage .. .. .	6	..	6	..	..	..	..	..	..	..	..	2	..	1	1	2	
145	Puerperal sepsis not returned as post-abortion .. .. .	2	..	2	..	..	..	..	..	..	..	..	..	1	..	1	..	
146	Puerperal albuminuria and con- vulsions .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
147	Other toxæmias of pregnancy ..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	
148	Puerperal phlegmasia alba dolens, embolism, and sudden death ..	3	..	3	..	..	..	..	..	..	..	..	..	2	1	..	..	
149	Other accidents of childbirth ..	2	..	2	..	..	..	..	..	..	..	..	..	1	..	1	..	
150	Other or unspecified conditions of the puerperal state .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Diseases of Pregnancy, Childbirth and the Puerperal State .. .. .	14	..	14	..	..	..	..	..	..	..	..	2	5	2	3	2	
	<b>XII. Diseases of the Skin and Cellular Tissue.</b>																	
151	Carbuncle, boil .. .. .	2	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	
152	Cellulitis, acute abscess .. .. .	3	2	1	1	..	..	..	..	..	..	..	..	..	..	1	..	
153	Other diseases of the skin and its annexa .. .. .	2	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	
	Total Diseases of the Skin and Cellular Tissue .. .. .	7	4	3	2	..	..	..	..	..	..	..	..	1	..	1	..	

									WARD																	
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Brightmet	Derby	Hulton	Deane-c-Lostock	Runworth	Halliwell	Heaton	Smithills	Astley Bridge	
1 4 1 .. ..	1 1 1 1 2	1 1 1 2 1	1 5 .. 1 1	.. 6 .. .. 1	.. .. .. .. 1	.. 1 .. .. ..	.. 1 .. .. 1	7 21 5 1 6	.. 2 .. .. 1	.. .. .. .. ..	1 2 1 1 1	.. .. 1 1 ..	.. .. .. .. ..	1 1 .. .. ..	.. .. 2 .. 1	1 1 .. .. ..	1 .. 1 .. ..	.. 2 .. 1 1	1 .. .. 1 1	.. .. 1 .. 1	.. 1 .. .. ..	1 3 .. .. ..	1 1 2 .. ..	.. 3 .. .. ..	1 6 1 .. ..	
8	10	12	13	10	1	1	9	86	4	2	12	9	..	4	6	7	3	7	5	7	2	6	7	5	9	
6 1 4 1 1	12 1 10 1 1	11 1 9 .. ..	18 .. 15 5 2	7 .. 5 2 ..	3 .. .. .. ..	1 .. .. .. ..	.. .. .. .. ..	82 4 64 .. ..	5 .. 5 .. 1	6 .. 5 .. 1	8 1 6 .. ..	6 .. 4 1 ..	1 .. 1 .. ..	7 .. 5 .. ..	3 1 2 .. ..	5 1 4 .. ..	3 .. 1 .. ..	11 1 7 .. ..	6 .. 6 .. 2	4 .. 3 .. ..	3 .. 3 .. ..	4 .. 3 .. 1	.. .. .. .. 1	6 .. 5 .. 1	4 .. 4 .. 1	
1 .. 1 1 .. .. ..	1 1 .. 1 .. 3	1 .. .. .. 2 4	3 .. .. 2 6	2 .. 1 .. 4	1 .. .. .. ..	1 .. .. .. ..	.. .. .. .. ..	14 2 4 5 18 4	.. 1 .. 1 .. ..	1 .. 1 .. 1 ..	1 .. .. 1 3 ..	2 .. 1 .. 2 ..	.. .. .. .. 1 ..	2 .. .. .. 1 2	.. .. .. .. .. ..	.. .. .. .. 2 ..	2 .. .. .. .. ..	3 .. .. .. .. 1	.. .. .. 2 .. ..	1 .. .. .. .. ..	.. .. .. .. 2 ..	1 .. .. .. 2 ..	.. .. .. .. .. ..	1 .. 1 .. 1 2 ..	.. .. .. .. .. ..	
8	17	15	26	12	3	1	..	115	8	8	11	10	2	10	3	7	3	11	9	4	5	7	..	10	7	
.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. 6 2 1 3 2 ..	.. .. 1 .. .. .. ..	.. .. .. 1 .. .. ..	.. .. .. .. .. ..	.. .. .. 1 .. .. ..	.. .. .. .. .. ..	.. .. .. 1 .. .. ..	.. .. 1 .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. 1 .. .. 1 ..	.. .. .. .. .. ..	.. .. 1 .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..		
.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	14	1	1	2	1	..	1	2	.. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	1	1	.. .. .. .. ..	1	.. .. .. .. ..	1	1	2
.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. .. .. ..	1 .. .. 1	.. .. .. 1	.. .. .. ..	.. .. .. ..	1 1	2 1	.. .. .. ..	.. .. 1 .. ..	.. .. 1 .. ..	.. .. .. .. ..	1 .. .. .. ..	.. .. 1 .. ..	.. .. .. .. ..	.. .. .. .. ..	.. .. .. .. ..	1	.. .. .. .. ..	.. .. .. .. ..	.. .. .. .. ..	.. .. 1 .. ..	1 1	.. .. .. ..		
.. .. .. .. .. ..	.. .. .. .. .. ..	.. .. .. 1 .. ..	.. 1 .. 1	.. .. .. ..	.. .. .. ..	.. .. .. ..	2 5	5	.. .. .. ..	.. .. 2 .. ..	2 .. 1 .. ..	.. .. .. .. ..	1 .. .. .. ..	1 .. 1 .. ..	.. .. .. .. ..	.. .. .. .. ..	.. .. .. .. ..	1	.. .. .. .. ..	.. .. .. .. ..	.. .. .. .. ..	1 1	1 1	.. .. .. ..		





[illegible]



									WARD																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br hmet	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	1	1	..	..	1	1	2	4	..	..	1	..	..	..	1	..	..	..	..	1	..	1	..	2	
..	..	..	1	..	..	..	..	3	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	
..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
9	8	5	15	4	7	3	4	87	4	8	11	6	..	7	3	4	2	7	5	4	5	13	1	1	10
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	2	1	1	..	..	1	5	..	..	2	..	..	1	..	..	..	2	..	..	1	..	..	..	
..	..	2	1	1	..	..	1	5	..	..	2	..	..	1	..	..	..	2	..	..	1	..	..	..	

List No.	CAUSES OF DEATH	Total	SEX		AGE														
			M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	
1-44	Infectious and Parasitic Diseases	277	159	118	9	10	6	6	10	14	3	13	10	18	19	19	10	1	
45-55	Cancer and other Tumours ..	302	121	181	..	..	..	..	1	1	..	1	1	1	4	8	9	1	
56-69	Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases ..	83	29	54	..	..	1	..	..	1	3	5	2	..	3	4	3	..	
70-74	Diseases of the Blood and Blood-forming Organs .. ..	27	10	17	..	..	..	..	..	..	1	..	..	1	..	..	..	..	
75-77	Chronic Poisoning .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
78-89	Diseases of the Nervous System and Sense Organs .. ..	179	77	102	6	2	..	..	1	2	2	2	3	1	1	3	5	..	
90-103	Diseases of the Circulatory System	693	344	349	1	..	..	..	..	..	..	3	5	6	3	7	13	2	
104-114	Diseases of the Respiratory System	238	131	107	26	9	8	2	..	1	..	1	3	5	5	8	10	..	
115-129	Diseases of the Digestive System	95	52	43	5	1	1	1	1	2	4	..	2	2	5	1	5	..	
130-139	Non-Venereal Diseases of the Genito-Urinary System and Annexa .. ..	115	67	48	..	..	..	..	..	..	..	..	2	3	2	4	4	..	
140-150	Diseases of Pregnancy, Childbirth and the Puerperal State ..	14	..	14	..	..	..	..	..	..	..	..	2	5	2	3	2	..	
151-153	Diseases of the Skin and Cellular Tissue .. ..	7	4	3	2	..	..	..	..	..	..	..	..	1	..	1	..	..	
154-156	Diseases of the Bones and Organs of Locomotion .. ..	3	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
157	Congenital Malformations ..	24	14	10	21	..	..	..	1	..	1	..	..	..	..	..	1	..	
158-161	Diseases of Early Infancy ..	61	42	19	61	..	..	..	..	..	..	..	..	..	..	..	..	..	
162	Old Age .. ..	205	97	108	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
163-198	Deaths from Violence .. ..	91	51	40	2	..	1	1	..	2	4	3	4	3	2	..	8	..	
199-200	Ill-defined Diseases .. ..	6	1	5	..	..	..	1	..	..	..	..	..	..	..	..	..	..	
	GRAND TOTAL .. ..	2420	1200	1220	133	22	17	11	14	23	18	28	34	46	46	58	70	9	



									WARD																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Tonge	Exchange	Bradford	Church	Great Lever	Dar. Lever c-Br'htmet	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge
27	23	12	19	7	4	1	41	236	6	12	37	22	3	33	14	8	12	23	11	7	17	29	3	29	11
35	59	57	44	19	10	1	1	301	6	19	41	22	4	27	8	24	9	34	11	6	18	24	8	21	20
9	9	12	11	7	1	..	1	82	3	4	6	7	..	9	3	8	1	11	4	3	3	9	3	7	2
1	4	5	7	3	..	1	..	27	3	..	3	3	1	..	1	6	2	1	2	..	..	2	1	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	31	26	32	20	12	1	9	170	7	13	25	22	..	10	9	11	6	16	4	6	5	18	3	7	17
63	116	106	117	107	58	25	1	692	18	32	95	72	17	65	31	59	18	66	17	16	36	59	17	47	28
29	24	28	18	22	13	8	45	193	10	20	35	19	4	24	7	17	12	18	15	6	10	18	5	14	4
8	10	12	13	10	1	1	9	86	4	2	12	9	..	4	6	7	3	7	5	7	2	6	7	5	9
8	17	15	26	12	3	1	..	115	8	8	11	10	2	10	3	7	3	11	9	4	5	7	..	10	7
..	..	..	..	..	..	..	..	14	1	1	2	1	..	1	2	..	..	..	1	1	..	1	..	1	2
..	..	..	1	1	..	..	2	5	..	..	2	..	1	1	..	..	..	..	1	..	..	..	1	1	..
1	..	1	..	1	..	..	..	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	22	2	..	1	3	2	..	6	1	2	2	2	..	..	..	..	1	2	2
..	..	..	..	..	..	..	61	..	4	7	6	2	..	8	1	6	3	7	2	3	4	3	1	2	2
1	1	15	51	53	52	32	..	205	3	22	35	6	2	25	10	13	10	16	3	5	10	18	5	8	14
9	8	5	15	4	7	3	4	87	4	8	11	6	..	7	3	4	2	7	5	4	5	13	1	1	10
..	..	2	1	1	..	..	1	5	..	..	2	..	..	1	..	..	..	2	..	..	1	..	..	..	..
202	302	296	355	267	161	74	197	2223	77	149	326	206	34	231	99	172	83	221	90	68	116	207	56	156	129

## TABLE II.

(STATISTICS SUPPLIED BY THE REGISTRAR-GENERAL.)

CAUSES OF DEATH	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
ALL CAUSES .. .. .	M	1203	83	13	16	21	33	51	64	128	255	332	207
	F	1218	51	10	24	21	26	45	60	114	248	324	295
Typhoid and paratyphoid fevers ..	M	1	..	..	..	..	..	..	..	..	1	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..
Measles .. .. .	M	1	..	1	..	..	..	..	..	..	..	..	..
	F	3	..	..	2	1	..	..	..	..	..	..	..
Scarlet fever .. .. .	M	..	..	..	..	..	..	..	..	..	..	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..
Whooping cough .. .. .	M	5	1	2	2	..	..	..	..	..	..	..	..
	F	9	4	2	3	..	..	..	..	..	..	..	..
Diphtheria .. .. .	M	15	..	..	7	7	1	..	..	..	..	..	..
	F	8	..	..	3	5	..	..	..	..	..	..	..
Influenza .. .. .	M	46	..	..	..	..	3	3	4	7	19	7	3
	F	61	2	1	1	1	..	3	6	14	8	17	8
Encephalitis lethargica .. .. .	M	3	..	..	..	..	..	1	1	..	..	1	..
	F	1	..	..	..	..	1	..	..	..	..	..	..
Cerebro-spinal fever .. .. .	M	2	1	1	..	..	..	..	..	..	..	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis of respiratory system	M	63	..	..	..	..	8	17	9	10	16	3	..
	F	26	..	..	..	1	5	9	6	4	1	..	..
Other tuberculous diseases	M	11	..	2	1	2	2	2	1	1	..	..	..
	F	7	1	1	..	..	3	..	..	..	1	..	1
Syphilis .. .. .	M	2	1	..	..	..	..	..	1	..	..	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..
General paralysis of the insane, tabes dorsalis .. .. .	M	2	..	..	..	..	..	..	..	1	1	..	..
	F	1	..	..	..	..	..	..	..	..	1	..	..
Cancer, malignant disease	M	116	..	..	..	..	1	3	5	13	39	48	7
	F	177	..	..	..	..	..	2	11	36	53	51	24
Diabetes .. .. .	M	11	..	..	..	..	..	..	..	3	2	4	2
	F	26	..	..	..	1	..	1	3	1	7	9	4
Cerebral hæmorrhage, etc.	M	67	..	..	..	..	..	..	1	9	17	28	12
	F	80	..	1	..	..	..	..	2	7	23	28	19
Heart disease .. .. .	M	290	..	..	1	1	6	3	12	36	82	91	58
	F	313	..	..	..	2	5	7	9	28	73	102	87
Aneurysm .. .. .	M	2	..	..	..	..	..	..	..	1	..	1	..
	F	1	..	..	..	..	..	..	..	..	..	1	..
Other circulatory diseases	M	56	1	..	..	..	..	..	..	1	12	21	21
	F	51	..	..	..	..	..	..	..	2	12	16	21
Bronchitis .. .. .	M	40	..	..	1	..	..	2	1	3	8	8	17
	F	42	2	..	..	..	..	2	1	1	9	12	15
Pneumonia (all forms) .. .. .	M	77	13	6	2	1	1	5	11	11	13	11	3
	F	57	9	4	7	..	2	1	4	2	12	10	6
Other respiratory diseases	M	11	2	..	1	..	..	..	1	1	6	..	..
	F	6	..	..	..	..	..	..	..	1	3	2	..
Peptic ulcer .. .. .	M	13	..	..	..	..	1	1	1	5	3	2	..
	F	7	..	..	..	..	..	1	3	..	..	3	..
Diarrhœa, etc. .. .. .	M	5	4	..	..	..	..	..	1	..	..	..	..
	F	4	..	..	2	..	..	1	..	..	1	..	..
Appendicitis .. .. .	M	4	..	..	..	1	..	1	..	..	1	1	..
	F	2	..	..	..	..	..	..	..	..	1	1	..
Cirrhosis of liver .. .. .	M	4	..	..	..	..	..	..	..	..	1	3	..
	F	1	..	..	..	..	..	..	..	1	..	..	..
Other diseases of liver, etc.	M	5	..	..	..	..	..	..	..	1	..	2	2
	F	9	..	..	..	..	..	..	..	..	4	3	2
Other digestive diseases .. .. .	M	21	1	1	1	2	2	1	1	1	2	6	3
	F	20	..	..	1	2	..	2	..	1	5	4	5
Acute and chronic nephritis	M	40	..	..	..	..	1	4	3	7	6	16	3
	F	39	..	..	..	..	1	1	2	6	11	11	7
Puerperal sepsis .. .. .	F	3	..	..	..	..	..	2	1	..	..	..	..
Other puerperal causes .. .. .	F	10	..	..	..	..	2	4	4	..	..	..	..
Congenital debility; premature births, malformations, etc. ..	M	54	52	..	..	1	..	..	1	..	..	..	..
	F	29	29	..	..	..	..	..	..	..	..	..	..
Senility .. .. .	M	94	..	..	..	..	..	..	..	..	..	42	52
	F	105	..	..	..	..	..	..	..	..	1	25	79
Suicide .. .. .	M	15	..	..	..	..	..	..	3	3	4	3	2
	F	10	..	..	..	..	..	2	1	1	5	1	..
Other violence .. .. .	M	45	1	..	..	3	5	4	3	6	3	10	10
	F	29	1	..	2	3	2	..	1	1	3	6	10
Other defined diseases .. .. .	M	82	6	..	..	3	2	4	4	8	19	24	12
	F	78	3	1	3	5	5	7	6	8	14	20	6
Causes ill-defined or unknown	M	..	..	..	..	..	..	..	..	..	..	..	..
	F	3	..	..	..	..	..	..	..	..	..	2	1



